FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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FEEDSTUFFS *Features This Week*

RESEARCH SUMMARIES—Swine, sheep and dairy papers from the Southern Agricultural Workers Conference are summarized beginning on page 10.

SPECIFICATION EGG CONTRACTS—Specification and contract production of eggs is discussed in an article beginning on page 18.

QUALITY CONTROL—The objectives of a practical quality control program are presented on page 32.

NUTRITIONAL LITERATURE—Interpretation of nutritional literature is discussed in this article. Page 58.

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3 Forums Constitute Educational Nucleus Of GFDNA Convention

WASHINGTON—Plans for the annual convention of the Grain & Feed Dealers National Assn. in Washington, March 22-24, are nearing completion, reports Charles Force, association president.

"The expected record-breaking success and attendance at this 65th annual convention is attributed to the attraction of the nation's capital, plus three special educational forums, a congressional dinner, and a host of prominent speakers," Mr. Force noted. It's the first time GFDNA has scheduled its annual convention in Washington, D.C.

The convention schedule has been changed somewhat from past years to allow for the Secretaries Circle meetings and the executive committee meeting on Monday and Tuesday, March 20-21. Wednesday, Thursday

(Turn to GFDNA, page 106)

To Report New Bloat Findings

COLLEGE PARK, MD. — University of Maryland researchers, using what is described as a different type of approach to the problem, apparently have established the basic cause of bloat. One of the highlights of the Maryland Nutrition Conference will be a report on the work on bloat presented by Dr. E. C. Leffel and R. J. Komarek.

It would appear, said Dr. R. D. Creek, conference chairman, that their work will soon lead to practical control measures that may be of "invaluable benefit to livestock producers."

The Maryland conference will be held March 16-17 at the Shoreham Hotel in Washington, with registration starting the previous evening.

Dr. Creek said that another item of special interest will be the work of W. C. Supplee of the Maryland poultry department. He will reveal an interrelationship between zinc and

(Turn to BLOAT, page 101)

Feed Men Warned of 'Management Myopia'

By MARTIN E. NEWELL
Feedstuffs Staff

KANSAS CITY — The emphasis was on marketing as nearly 700 feed men gathered here this week for the Midwest Feed Manufacturers Assn. convention, and from the keynote talk to the final discussions, feed men were reminded of the importance of more effective and more creative marketing in the feed and related food fields.

At the outset, the keynote speaker warned feed business management against "Management Myopia"—the failure to see that there is any need at all for marketing—marketing in the sense of purposeful, planned action.

The convention, held Feb. 19-21 at the Hotel Muehlebach in Kansas City, drew a large (despite the airline strike problems) and attentive crowd.

Summaries of some of the talks follow. (Also see accompanying stories and reports of additional talks in next week's issue.)

MANAGEMENT MYOPIA—"Marketing Myopia" is a phrase coined recently by Theodore Levitt in an article in the Harvard Business Review, and Edward C. Bursk, editor of that publication, took this as his starting

(Turn to MYOPIA, page 105)

Industry Approach to Credit More 'Mature'

KANSAS CITY—The feed industry is now using a more mature approach to farm credit extension, based on a more careful analysis of production and experience records of feeders, a banker (formerly in the feed business) told Midwest Feed Manufacturers Assn. delegates.

The talk by Maurice Johnson on "Feed Financing Is Growing Up" was one of the highlights of the Midwest meeting this week in Kansas City.

Among other convention talks was one pointing out that there are still many independent egg producers but that they are of a new type.

Summaries of the financing and egg industry talks follow:

FEED FINANCING—Feed industry credit is becoming more "bankable," Maurice Johnson, vice president, First National Bank, Kansas City, said in pointing out that the feed industry is now using a more mature type of approach to farm credit extension based on a more careful analysis of cost of production and experience records of the feeder involved.

Some of the standards against which feed credit—or any credit—

(Turn to CREDIT, page 8)

Better Agri-Service Topic for Ohio Grain, Feed Convention

By DON E. ROGERS
Feedstuffs Staff

COLUMBUS — The 82nd annual convention of the Ohio Grain & Feed Dealers Association, Inc., at the Neil House Feb. 19-21 was one of the largest meetings ever for this old-time organization. The nearly 1,000 persons attending were attracted by a program of timely topics and outstanding speakers. Subjects covered in depth under the overall theme of "Launching a Better Agri-Service" included grain and feed marketing, handling, management and plant safety.

Carl A. Pitstick, Southwestern Farm Chemical Co., Waynesville, Ohio, was elected president, succeeding George Moorhead, Moorhead Elevator, Leipsic. James S. Kile, Fred Kile & Son, Kileville, was chosen first vice president and Richard Shirack, The Ohio Equity, Inc., Lima, was elected second vice president; Nelson J. Cotton, Jr., Ohio Farmers Grain Corp., Fostoria, was named treasurer;

(Turn to OHIO, page 8)

Sees Little Farm Mixing 'from Ground Up'

By THOMAS E. LETCH
Feedstuffs Staff

KANSAS CITY—Developments in on-farm mixing of feed received considerable attention at the Midwest Feed Manufacturers Assn. convention, and the principal speaker on the subject came up with the conclusion that there will be little feed "made from the ground up" on the farm.

Both the speech and subsequent discussion brought out the need for the industry to develop and present information and specific data showing why feeders should rely on efficient feed firms.

A summary of the talk and panel discussion of "Making Feed at Point of Use" follows:

ON-FARM FEED MIXING — A prediction that there will be very little feed made "from the ground up" on the farm was voiced by Dr. Robert W. Schoeff, formula feeds extension specialist, Kansas State University. At the same time, he called for a positive selling program by industry to acquaint farmers with the reasons why they should rely on the feed manufacturer to make their

(Turn to FARM MIXING, page 104)

Approval of Grain Bill Unlikely; Sale Permission Still In

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Intensive questioning of Secretary of Agriculture Orville Freeman by both sides of the Senate Agriculture Committee this week leads to the conclusion that his feed grain bill is unlikely of enactment in its submitted form. If the

(Turn to GRAIN BILL, page 101)

1960 Tonnage 39.5 Million; Off 1% from 1959

CHICAGO — Manufactured feed production in 1960 was an estimated 39.5 million tons. This represents a slight drop—1%—from the record high of 40 million tons in 1958 and 1959. Tonnage is expected to increase again this year, and the 1961 total is likely to set a new record.

Figures on 1960 feed production, including more detail than in previous reports, were released this week by the American Feed Manufacturers Assn. The estimates are based on the reporting program in which member firms report tonnage to the AFMA's market research department.

Highlights of the report, in addition to the tonnage total, included the following:

● The largest increases in 1960 tonnage were in the west south central and south Atlantic regions. The Southeast total has been increasing more percentagewise than any other area. The largest decreases in 1960 were in the east north central and New England regions.

● Cattle feed tonnage increased the most percentagewise in 1960, and the beef and sheep category was at a new high. Hog and egg feeds were down the most. Egg feed tonnage, as a percentage of the total, dropped for the sixth consecutive year.

● Sixty-eight per cent of the manufactured feed in the AFMA estimates was complete feed (not requiring the addition of grain for feeding). By areas, the complete feed percentage ranged from highs of more than 90% in the Pacific Coast and New England regions to a low of about 40% in the Corn Belt.

(Turn to TONNAGE, page 101)

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The regional circulation of this issue is concentrated in the northwestern states

Top of the Hopper

THE PROPOSAL MADE by an export sales official that feed grains consumed by poultry sold for export be replaced from government stocks (Feedstuffs, Feb. 18, page 1) presents a rather tempting approach to stimulating more activity in poultry production in the U.S. while at the same time fulfilling some of the "food for peace" objectives of the administration. Apparently the suggestion would involve full replacement from government stocks for the grain thus fed and not a subsidy equivalent to that applying to exported grain.

This probably could provide a lot of low cost poultry for overseas programs and increase feed manufacturing activity, but the proposal no doubt would be closely examined from the possible effect it would have on feed grain exports now being built up and on the budding poultry industries overseas which have been gaining great momentum.

Part of the government's overseas assistance program has been geared to helping some nations get local poultry and livestock production going on a scale sufficient to improve U.S. feed grain export prospects and also provide more diversified agricultural employment in these countries. The latter objective is considered by some economists as the most sound contribution to "food for peace" the U.S. could make.

The proposal would represent a sharp departure from present government policy, and it is likely to meet considerable opposition. An alternative might be some sort of a reduced price arrangement on grain fed to export poultry to "equalize" the cost of producing broilers in the U.S. for overseas shipment with the costs of foreign producers using subsidized grain. This would be somewhat comparable to the application of subsidies allowed on flour milled for export which are calculated to be equivalent to export wheat.

THE BUDGET PROPOSED for fiscal 1962 for the Food and Drug Administration by the Eisenhower administration would boost funds from $19 million in the current year to $25.4 million. This would provide a 13.7% increase in personnel, including 84 more persons for drug regulation and 42 for food additives. Among the 301 new employees would be 60 more inspectors, making a total inspectional force of 685.

The Animal Health Institute, which reports these figures, says that the proposal is not likely to be changed by the Kennedy administration.

EXCERPTS FROM SOME SPEECHES made last fall and way last summer by Dr. James T. Ralph, the new assistant secretary of agriculture, help amplify some of the observations made in Capital Comment last week (page 4):

"If you set quotas on each individual (poultry producer), based upon a history of marketing, and you attach the quota to the individual, the inefficient producer would find that he is not making as much profit as the efficient producer, because his price is the same. Over a period of time, he would have a tendency to get out."

Another quote:

"Our most common misconception is that we operate under a system of perfectly competitive enterprise called 'free' enterprise. This is not true for most of our people. The term 'free enterprise' indicates that all persons are free to enter into the production of a particular goods or service. This is true only for agriculture . . ."

"WE THINK IT ONLY FAIR to tell you that in many cases research on better feed additives for improving gains and cutting production costs in

(Turn to **TOP OF THE HOPPER**, page 107)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Although feed business around the nation this week was somewhat disappointing to most manufacturers, sales in February of this year were destined to be greater than in the same month a year ago. Reports from roughly half of the regions said this week's business was under last week's, while the other indicated increases. Feed men in the colder areas of the country expect new snow cover to stimulate business. And around the nation there is the feeling that price increases in vegetable and animal proteins, and the resulting price increases in formula feed, are factors in favor of revitalized buying interest.

This week's wholesale feedstuff price index of 81.6 is 0.6 higher than a week ago and 3.8 higher than a year ago. A drop of 0.8 to 62.4 was reported by USDA for the feed-grain index. The latest index also is about that much lower than a year ago. The hog-corn ratio remains in a climbing attitude. This week's mark of 16.4, based on Chicago prices, is 0.4 over a week ago and 4.3 over a year ago.

Northwest

More snow which arrived this week in the Northwest may help to step up formula feed movement in the region. Mild weather has been mentioned by many feed manufacturers as one of the reasons why sales haven't been picking up as expected.

Other comments offered to explain why the early February slump has lasted "too long" include:

—"Farmers have too much corn to feed."

—"Money is still tight—that's what dealers keep telling us. Many feeders are finding it hard to obtain additional credit—haven't paid last year's bills yet."

—"Hog numbers are down."

But the coin has two sides, as usual.

Here are some of the factors feed men mentioned this week which should contribute to much improved business as March comes into the picture:

—"Turkey feed sales are growing."

—There are signs that feeder and dealer inventories are running out. One manufacturer reported that orders kept his mills running on Washington's Birthday and on Saturday this week.

—Ingredient and formula feed prices are advancing. This "up" market should shake some buyers loose. Advances were reported this week in soybean oil meal, linseed oil meal, animal proteins.

Northeast

Sales of formula feeds were a little slower in spots, but manufacturers held to the running time of the previous week.

February's weather in this region has been in direct contrast with January's bitter cold. Numerous days this month have been above normal in temperature and farmers haven't had to use extra rations to maintain body heat and weight of their livestock and poultry.

End products continued to hold up very well. Eggs edged off a little but are still far above a year ago. Broilers in the East crossed the 19¢ per pound mark—the highest level in many months. However, heavier replacements may dim prospects in the fall.

Dairy feeds and egg mashes remained the sales leaders. Chick and turkey starting feeds are continuing to increase in volume but the amount isn't significant as yet. There are not many broilers being fed in this region, even though the market has reached profitable levels.

Major grains backed down in the ingredient market during the week.

Country trade for millfeeds remained good, but large mixers were in no hurry to acquire supplies.

Running time of formula feed manufacturers held steady at 36 hours last week.

Central States

Commercial mixed feed people appear to be fairly well satisfied with the volume of business that is being done; not that it could not be better but rather that in view of the furor that is being raised in Washington on the score of the highly publicized let-down in the country's economy the volume of feed business should be materially less than it is. It seems to be better than it was a year ago and as the current month passed its midway mark, there was evidence that the volume which had been lagging in January was inching up on the previous month.

A 40-hour work week is being generally maintained with occasional spots where it is just a trifle less but such occurrences are nicely offset by others where they are a little on the plus side. All lines seem to be enjoying a normal mid-February demand.

Ohio Valley

Mixed reports on formula feed sales were noted by Ohio Valley manufacturers this week, but most of them said that the volume was moving upward in quite satisfactory tonnages. Ingredient suppliers also reported an expanding diversification for chemicals and oils, indicating a good early spring spread in feeding requirements on valley farms.

Valley farmers were encouraged during the last week end when Ohio River flood threats appeared to have been minimized by cold but gentle rains that softened the frozen ground sufficiently to raise the underground water table by an inch or more from its previous winter deficit of 2½ in.

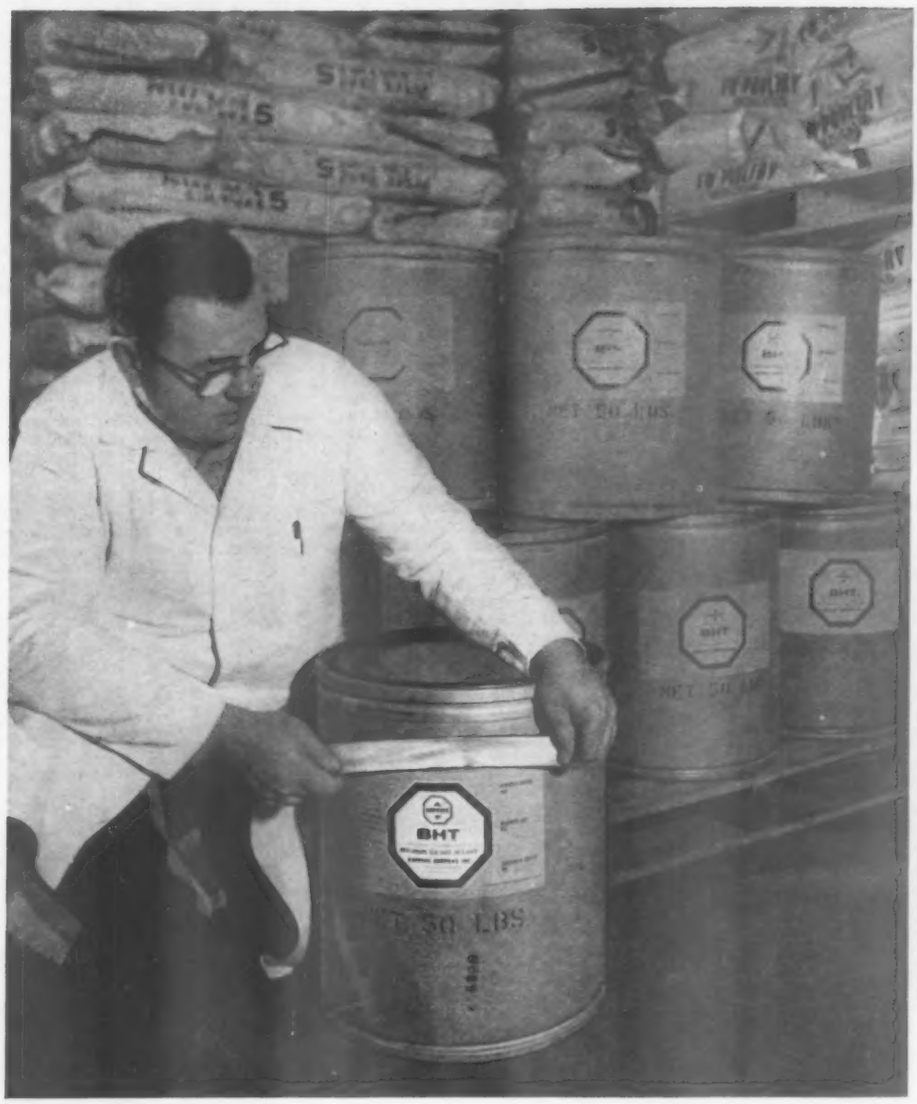
Meanwhile, eggs and cattle are reported moving out satisfactorily at wholesale markets and stockyards, with supplies being readily absorbed. This, of course, is serving as an incentive for continuing farm activities.

South Central

Formula feed business is a little slower than it was a week ago. Although the majority of the plants in the area are continuing to operate five days, the easing in demand has forced a number of units to shorten runs below the normal rate of eight hours.

Several factors seem to be contributing to the dull state of business. Most often mentioned were the warming trend of the weather, the upturn in formula feed prices and the fact that dealers have fairly good

(Turn to **MARKETS**, page 107)



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Record Disappearance Of Dehy in January Improves Market Tone

By THOMAS E. LETCH
Feedstuffs Staff

KANSAS CITY—A record disappearance of dehydrated alfalfa during January was reported by the U.S. Department of Agriculture this week, giving the dehy market its most bullish tone of the season.

Disappearance amounted to 103,000 tons, nearly 25,000 tons more than the 78,100 tons which moved out in January of 1960, and nearly 21,000 tons more than the five-year average.

With three months of the season remaining, stocks on hand at producing plants were reported at 288,900 tons Jan. 31. While this represented approximately 45,000 tons more than the 243,600 tons on hand the same date a year ago, market observers discount this as a depressing factor. They cite these reasons for believing there will be a stronger market until new production makes itself felt:

Demand Up

Disappearance in January was up so sharply because of the increased numbers of broilers, layers and turkeys being fed. These animal units will continue to be fed, which should mean dehy disappearance will continue to run ahead of a year ago.

Even if disappearance the remaining three months of the season is no higher than last year, when it amounted to 209,300 tons, observers said, the stocks will not be burdensome because dehydrators cannot rely on substantial production until the middle or the latter part of May. Thus stocks on hand April 30 must be adequate to meet demand for at least half of May.

Most of the dehy on hand now is believed to be in the hands of the blenders who fulfill year-around contracts and therefore must keep substantial inventories at their various plants going into the new season.

Production the remainder of this season will be practically all on the West Coast which does not affect the markets elsewhere in the country in a substantial way.

Current Market

The market at Kansas City late in the week was generally quoted at $48, bulk pellets, for 17% protein 100,000 units vitamin A guaranteed on arrival. This was the same price blenders had been quoting, but independent offerings below this figure had been common. Now the few lower offerings are reportedly from independents with very limited supplies.

The new USDA report brought these comments from the American Dehydrators Assn.: "Disappearance (in January) is second only to the 1958-59 year and shows an increase over a year earlier of 3.6%, practically keeping pace with the rise in production. The preliminary January figure is about equal to the highest ever attained which occurred in the 1958-59 year. If this pace keeps up there will be very little possibility of any burdensome carryover at April 30. The inventory picture shows a decided improvement for four months in a row. . . . Should this trend continue for the next three months the excess of inventory over the previous year could well be wiped out entirely."

USDA Lard Purchases

WASHINGTON—The U.S. Department of Agriculture has announced purchase of 9,738,000 lb. of lard for distribution to needy families and for use in the National School Lunch Program.

This purchase brings the total to 14,334,000 lb. at a cost of $2,287,000 since the program started in January, USDA reported.

Report U.S. Corn for Distilling Sought

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Information here indicates that a reported molasses transaction between a U.S. firm and the Castro government of Cuba has slipped and that at this time the deal is off.

Now, it is reported, a move is being made to persuade the U.S. Department of Agriculture to make surplus corn available for distillation purposes.

Distillation of corn for alcohol has been previously advocated, primarily for use in auto fuel. USDA experts have said previously that alcohol for fuel would be effective only if government grain could be obtained for about 25¢ bu.

An effort on behalf of corn for alcohol is said to be an attempt to offset unsuccessful Cuban dealings.

Observers say that if distilling interests could obtain corn equivalent to the molasses sought, it would amount to some 30 million bushels, resulting in 250,000 tons of distillers feeds.

Corn for alcohol, is is observed would carry "price dynamite" for the concentrate and feed industries.

Pfizer Announces Plans for Poultry Lab in Mississippi

FOREST, MISS.—Chas. Pfizer & Co., Inc., has announced plans to build a poultry diagnostic laboratory here in the heart of Mississippi's "broilerland."

Free diagnostic services will be provided to the state's broiler and egg producers by the new facility, according to J. J. Thompson, vice president and general manager of Pfizer's agricultural division. It is planned to have the laboratory completed and ready for use this spring.

The executive noted, "This new facility, located in one of our nation's most concentrated broiler regions, will be geared to helping Mississippi producers combat profit-taking disease problems. We sincerely hope the new laboratory will help to significantly reduce the state's share of the $240 million lost annually in U.S. farm income through poultry disease devastation."

The Pfizer laboratory here at Forest will represent the latest in diagnostic techniques, according to Pfizer spokesmen. Included will be isolation wards for birds, a large autopsy room with separate facilities for com-

(Turn to POULTRY LAB, page 101)

Chicago Bean Futures Continue 'Very Strong'

CHICAGO — After having shown some inclination to level off, possibly to consolidate the gains made earlier in the month, Chicago soybean futures continued "very strong" this week and the rally was not checked until all of the old crop deliveries had edged well into new high seasonal ground. New crop bean deliveries, while moving upward, too, were lagging on the nearbys and failed to establish themselves into new high seasonal territory.

Meal futures failed to make new highs for the crop but they are back up near the previously established top-ticks on both March and May while both July and August meal equalled their respective seasonal highs.

Cash soybean meal has been showing some inclination toward irregularity of action—backing away from the previous highs on the crop but, at the same time, revealing good recuperative power. Nothing further has been heard of shut-downs by processors on account of unprofitable conversion ratios.

Northern Biochemical Files Bankruptcy; Successor Firm Set

SHELDON, IOWA—An organizational meeting for the Sheldon Chemical Co., a new firm planned to succeed the bankrupt Northern Biochemical Co., will be held here early next week, according to Elliott Roosevelt, chief operating officer of the now defunct corporation.

Names of stockholders in the new corporation are to be made public next week also. As a successor firm, it will also engage in processing and marketing additives for livestock feed, it has been announced.

News of organizing the new company came on the heels of first steps toward voluntary bankruptcy of the defunct corporation in a Sioux City court.

The defunct corporation's largest stockholder, bank embezzler Mrs. Burnice Geiger, was sentenced to 15 years in prison Feb. 17. About $900,000 of the $2 million she admitted taking has been traced to the feed additive firm on checks which Mrs. Geiger cashed without funds being on hand, authorities say.

Now, ousted Northern Biochemical Co. president, Harold Kistner, Jr., faces charges for the second time since the $2 million embezzlement was discovered Jan. 16 by bank examiners. He was freed last month on a charge of aiding and abetting the bank embezzlement.

He was freed Feb. 20 on $5,000 bond on a charge of violating the Federal Securities Act. Two other employees of the company also posted bond on similar charges. Adolph (Mike) Biderman, a member of the defunct firm's accounting department, posted $5,000 bond and Robert S. Smith, a former company salesman, posted a $2,500 bond.

A 20-count indictment charged the three men with selling 7,000 shares of stock in Northern Biochemical to 19 individuals in Iowa, Nebraska, South Dakota, Minnesota and Illinois. One count charged the three with conspiracy since, and possibly before, Oct. 24, 1959, to use the mails to sell unregistered stocks. Maximum penalty for the first 19 counts is five years in prison and $1,000 fine on each. Maximum penalty on the conspiracy charge is five years and a $10,000 fine.

Mr. Roosevelt said in Omaha earlier in the week that Mr. Kistner's arrest was "certainly no surprise to me." He commented that the firm had been "a completely illegal operation."

In 1957 Mr. Kistner had been sentenced to one year in prison and then paroled for illegal sale of stock in the Wyoming Oil Co., Lincoln, Neb. The Security and Exchange Commission also obtained an injunction against Mr. Kistner and the oil company at the time.

New Sales Manager Named by Baroid

HOUSTON, TEXAS — Baroid Chemicals, Inc., has announced the appointment of Donald L. Moore as sales manager for the company. Mr. Moore will be responsible for industrial sales of minerals and chemicals. He will direct the activities of Baroid Chemicals, Inc., sales engineers throughout the country, with headquarters at the company's general offices in Houston.

Donald Moore

Baroid Chemicals, Inc., supplies feed manufacturers with National Western Bentonite and Texas Bentonite for use as bonding agents in pelletized feeds.

Allied Mills Research Post to Earl Hanson

CHICAGO — Earl H. Hanson has joined the products control section of the research division of Allied Mills, Inc., according to announcement by Dr. J. E. Hunter, vice president in charge of research.

Earl Hanson

Mr. Hanson has had broad experience in the field of nutrition and products control. He is a graduate of the University of Wisconsin where he received his B.S. degree with a major in animal husbandry and an M.S. degree with majors in animal nutrition and dairy husbandry.

After several years as a vocational agricultural teacher and dairy extension specialist, he joined the Ralston Purina Co. at St. Louis, where he spent seven years in the formulation department.

For the past 11 years, he has been with Archer-Daniels-Midland Co., Minneapolis, working on formulations, registrations, dealer services, Food & Drug Administration clearances, product control and pricing.

Mr. Hanson will be headquartered at the Allied Mills research division at Libertyville, Ill.

Liquid Feed Plant Opened in Illinois

PEORIA, ILL.—A new liquid feed plant—said to be the largest of its type—has begun manufacturing operations at the Kingston River Terminal, Mapleton-Peoria, Ill., according to Jack von Mettenheim, president of Illinois Liquid Feed Co.

The plant is described as being completely automatic, with a capacity of one ton of liquid feed every 90 seconds. It was built by Illinois Liquid Feed and its subsidiary, Wisconsin Liquid Feed Corp. The finished product is a liquid protein supplement marketed under the trade name LPS.

Mr. von Mettenheim said that his firm formerly had a dealership, and then a distributorship, for another liquid feed product.

He said the new supplement for ruminants offers a high level of vitamin A as well as other nutrients. LPS, he said, contains molasses, phosphoric acid, urea and trace minerals, plus 20,000 units of vitamin A palmitate per pound.

Mr. von Mettenheim said that favorable results have been obtained in tests of the supplement with dairy cows. As a feed for dairy cows, LPS is mixed with or poured on top of grain rations. The free choice method is recommended for calves, heifers and feeder cattle. The supplement is also used for sheep on a free choice basis.

Illinois Liquid Feed and its Wisconsin subsidiary plan to build three additional plants within the next two years, said Mr. von Mettenheim. He also told of the current distribution and dealer set-ups in Wisconsin and Illinois.

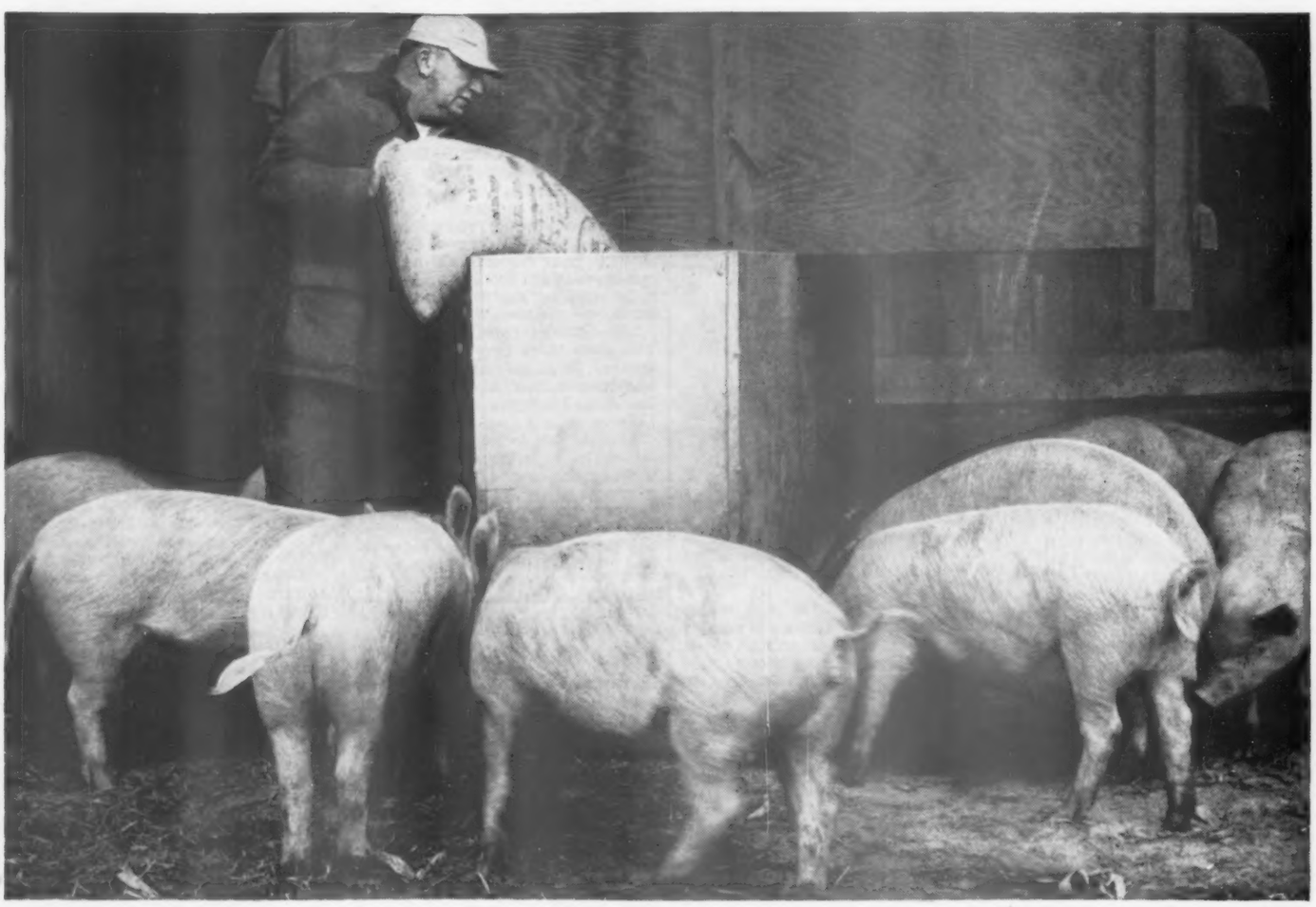
Among other executives are Ed Burroff, assistant manager; Milt Harteau, manager of Wisconsin Liquid Feed Corp., Milwaukee, and Wendell (Doc) Kenner, Illinois sales manager, formerly with Hales & Hunter Co.

March Is Egg Month

TRENTON, N.J.—March has been designated "New Jersey Egg Month" in a proclamation made by Governor Robert B. Meyner.

During March egg month, printed copies of the proclamation, with facsimiles of the governor's signature, will be displayed by supermarkets, food stores and other establishments allied with the food trade and with agriculture, it was reported.

ARE YOU GETTING YOUR DOLLAR'S WORTH OF SCOURS PROTECTION?



There are several products that will help prevent or treat outbreaks of scours (bacterial swine enteritis).

But, in all but one, the ratio between cost and effectiveness is out of line. The single exception is PRO-STREP.

PRO-STREP, an effective combination of penicillin and streptomycin, will help prevent scours at a lower cost than any other single antibiotic—narrow- *or* broad-spectrum! And, that's not all. PRO-STREP also helps stimulate appetites, promote growth and improve feed efficiency.

University tests have repeatedly demonstrated the value of a combination of penicillin and streptomycin in fortifying swine rations. The majority of published reports on this combination have been based on PRO-STREP.

That's why more and more progressive feed mills throughout the country are switching to PRO-STREP. What they want is what you want . . . an effective combination of antibiotics that can promote growth and help prevent "necro" at a lower unit cost. Merck Chemical Division, Merck & Co., Inc., Rahway, New Jersey.

The Best Antibiotic Combination... **PRO-STREP®** MERCK

Penicillin and Streptomycin

Formulation Research Gets Top Billing At Oregon Animal Nutrition Conference

By ROBERT BIRDSALL
Oregon State College

CORVALLIS, ORE. — Feed formulation research to control diseases, improve digestibility and give more efficient production of livestock and poultry had top billing at the 19th annual Animal Nutrition Conference at Oregon State College.

Co-sponsored by OSC and the Oregon Feed & Seed Dealers Assn., the February program attracted nearly 200 feed industry representatives.

Role of vitamins and amino acids in poultry nutrition, rations for improving eggshell quality, and a mass immunization program for coccidiosis were among main reports for poultry feed formulation.

Livestock feeding research reports included feed supplements for sheep and cattle, control of internal parasites, copper deficiency and selenium in animal nutrition, and improving barley for feeding swine.

Amino Acids

More efficient use of amino acids in growing chick rations was discussed by Dr. H. M. Scott, University of Illinois. He said recent tests have demonstrated that balancing of the excess amino acids makes it possible to reduce the protein by one-half in a purified diet of the casein-glucose type and still have maximum rate of chick growth. Protein in University of Illinois trials was reduced from 30% of the diet to 15%.

The 15% diet, when adequately supplemented with methionine, gave chick growth equal to that of a normal 20% diet containing adequate methionine supplement.

He pointed out, however, that the casein diet is not improved by supplemental methionine unless arginine and glycine are present in amounts greatly in excess of National Research Council recommendations.

It has long been known, he explained, that chicks fed a casein diet of 20% protein would respond to supplemental arginine up to a level of 1.6 to 1.7%, compared to the NRC requirement of 1.2% arginine.

When arginine and glycine were present in adequate amounts, the growth promoting ability of the 20% diet improved with each increment of methionine until the concentration of total sulfur amino acids reached 1.0% of the diet.

High Vitamin Margins

Dr. H. S. Wilgus, The Ray Ewing Co., Pasadena, Cal., advocated high margins of safety in bolstering poultry feed with vitamins. Decline in vitamin prices is now making this possible, he noted.

Dr. Wilgus said he has leaned toward adding vitamins of known potency and full biological availability to rations so that the vitamins, by themselves, provide approximately the NRC recommended levels.

Eggshell Thickness

The role of nutrition in influencing eggshell thickness was reviewed by Dr. G. H. Arscott, Oregon State College poultry nutritionist, who is currently conducting studies with calcium levels above the NRC recommendation of 2.25% of the ration.

Dr. Arscott has observed beneficial results with 2.75% calcium in floor-pen studies with a high energy type ration containing about 75% corn. He said final conclusions will not be drawn until birds have been observed through the stress of summer weather.

Trials with caged layers receiving 3% calcium resulted in significant improvement in shell thickness, the researcher stated. Best performance came from a combination of 3% calcium and oleandomycin at 4 gm. per ton.

Mass Immunization

Dr. W. E. Babcock, Oregon State College veterinary department, reported successful field trials in mass immunization of pullets against five species of coccidia.

More than 800,000 pullets have been immunized in recent years by feeding 5 to 10-day-old chicks a starter mash containing measured numbers of coccidia from the five species in sufficient amount to produce strong immunity.

At 24 to 36 hours after feeding of the coccidia, chicks are given a medicated feed containing .05% sulfaquinoxaline for six continuous days. No further treatment is needed for the five species.

Dr. Babcock emphasized the importance of using viable coccidia capable of establishing infection. Short shelf-life of coccidia has been a major deterrent against mass immunization programs.

He also stressed the need to administer coccidia in sufficient number to result in clinical coccidiosis if not suppressed by a coccidiostat. This should be at levels capable of giving even the lightest eating birds the minimum treatment for immunization. Dosages obtained by heavy eaters pose no problem, he added.

Other important management practices: chicks should not have received any coccidiostat prior to feeding of the coccidia mixed feed; have plenty of hopper space to assure that all chicks get the minimum amount of coccidia, and see that any previous feed spilled in the litter is removed or covered so that chicks eat only the coccidia mixed feed.

(Turn to OREGON, page 106)

MIDWEST OFFICERS—New officers of the Midwest Feed Manufacturers Assn., named at the group's convention in Kansas City, are pictured here. Left to right are Lloyd Larson, executive vice president; Larry Alley, Pay Way Feed Mills, Kansas City, the new president; Phil Wake, J. H. Wake Feed Mill, Oskaloosa, Iowa, treasurer; Charles Harris, Burrus Feed Mills, Ft. Worth, secretary, and Harold Fouts, G. E. Conkey Co., Nebraska City, Neb., vice president.

Farm Mixing Talk Set for Iowa Event

AMES, IOWA—On-farm mixing of livestock feed continues to receive attention at college-sponsored feeder events, and an announcement of the annual Iowa Swine Production Conference indicates that one of the principal program features will be a discussion of "what should be considered in determining whether to mix swine rations on the farm."

The conference will be held March 7 at Iowa State University, and the speaker scheduled to discuss costs and other factors in farm mixing is Dr. J. A. Hoefer of Michigan State University.

Also planned for the meeting are a report on experience with specific pathogen-free swine, explanations of extension educational programs, a report on the national animal disease laboratory near Ames and demonstration of an experimental all-mechanized growing-finishing swine unit.

WISCONSIN FIRE KILLS TURKEYS

MUSCODA, WIS.—An old factory building was burned to the ground in a spectacular $50,000 blaze here recently. Between 13,000 and 14,000 young turkeys were killed in the blaze, according to the owner of the building, Frank Taylor of Blue River, Wis.

The three-story building had been converted into a brooder house. The turkeys were less than a month old. The building was equipped with 60 small brooder stoves, 20 to a floor, it was reported.

CSC Buys Four Vitamin Companies

NEW YORK—The acquisition of the assets of a complex of four companies which manufacture and market stabilized vitamins by patented processes for the animal feed industry was announced by Commercial Solvents Corp. The action was described by Maynard C. Wheeler, president, as a major expansion and extension of CSC's animal nutrition operations which will add approximately $3 million sales volume for 1961.

The four companies are Stabilized Vitamins, Inc.; Vitaron Chemical Mfg. Co., Inc.; Astrol Products, Inc., of Garfield, N.J., and the Iowa Nutrition Co. of Clinton, Iowa. They were purchased for cash from their founder, Adolph Rosenberg, and his family. The price includes patents, land, buildings, research and production facilities, leaseholds and inventories. The business will operate as the Stabilized Vitamins division of CSC.

Mr. Rosenberg, a German-born animal nutrition scientist, founded Vitaron, the oldest of the four companies, in 1941. Stabilized Vitamins, Inc., which was started in 1952, utilizes a patented process for the stabilization of vitamin A to maintain effectiveness and potency in mixing, blending and storage.

CSC Consultant

The operations of the four companies were then extended to include the production of stabilized forms of vitamins D and E, and a specialized group of feed mixes for poultry, swine, cattle and sheep. Mr. Wheeler said that Mr. Rosenberg will continue

(Turn to CSC, page 107)

OREGON NUTRITION CONFERENCE—The first photo shows key participants in the 19th annual Animal Nutrition Conference at Oregon State College, Corvallis. From left, they are William Eggimann, Portland, Oregon Egg Producers, co-chairman of conference; Dr. J. H. Meyer, University of California; Dr. H. S. Wilgus, The Ray Ewing Co., Pasadena, Cal.; Dr. J. E. Oldfield, Oregon State College, co-chairman of conference; and Alec Runciman, Webfoot Fertilizer Co., Eugene, Ore., president of Oregon Feed & Seed Dealers Assn.

The second photo shows a busy registration desk at the Oregon conference. Left to right, registrants are Hal Hardin (seated), and Dick Bennison, both of Willis Small Feed Co., Eugene, Ore.; E. G. Horst, Chicago, Calcium Carbonate Co.; Walt Krumbholz, Spokane, Leo Cook Co.; Russ Hays, Portland, secretary of Oregon Feed & Seed Dealers Assn.; Irvin Ogard, Portland, Leslie Salt Co.; and (back to camera) Kent Penwell, Abbott Laboratories, Chicago.

The third photo captured three speakers taking a breather during recess at the Oregon conference. From left, they are Dr. James H. Meyer, University of California; Dr. J. E. Parker, Oregon State College; and Dr. H. M. Scott, University of Illinois.

Heavy Whites Lead Poult Production Rise With 87% Gain

WASHINGTON—Increased turkey poult production in January over a year earlier was led by the heavy white breeds, which registered an 87% gain, according to figures in the U.S. Department of Agriculture hatchery production report. The heavy white breed total was 2,209,000.

The hatch of other heavy breeds, mostly broad-breasted bronze, was 3,065,000, up 59%. The number of light breed poults hatched totaled 926,000, up 70% from January of 1960, USDA said.

And, USDA says that turkey eggs in incubators Feb. 1 indicate that the total number of poults hatched in February will be considerably larger than in February of 1960.

The Feb. 1 figures showed 4,498,000 heavy white breed eggs in incubators compared to 2,583,000 a year earlier. Other heavy white breed eggs in incubators were up from 7,798,000 to 10,858,000. Light breed eggs were up from 1,156,000 to 1,282,000.

Central Soya to Buy Glidden Co. Division

FT. WAYNE, IND.—The board of directors of Central Soya has voted to exercise the company's option to buy the Glidden Co.'s Chemurgy division, effective Sept. 1, 1961, it was announced by Harold W. McMillen, chairman of the board.

Central Soya has been operating the Chemurgy division facilities under a three-year lease, with an option to purchase the facilities for $8,550,000 after the lease expires Aug. 31, 1961.

The facilities are located in Chicago, Lockport and Seneca, Ill., and Indianapolis, Ind.

The Chicago facilities include a 6.8-million-bushel modern terminal elevator on Chicago's Calumet River; a multi-purpose plant at 1825 N. Laramie Av., Chicago, which includes a 2¼-million-bushel storage elevator and facilities for soybean processing, soya flour manufacturing, and production of soybean lecithin and edible and industrial proteins.

In Indianapolis there are a 3.5-million-bushel storage elevator, a soybean processing plant and adequate land for future expansion. The Chemurgy division facilities also include two originating elevators on the Illinois River, one at Lockport, Ill., and another at Seneca, Ill. Each has a storage capacity of 210,000 bu.

In commenting on the purchase, Mr. McMillen said that, "additional financing is not anticipated at this time in order to acquire these facilities." He added, by leasing the property for the past two and a half years, we have had an opportunity to study and evaluate it, and to acquire experience in its operation, which have come up to our expectations. We are now looking forward to the continued growth of this important addition to our company."

Eggs for the Needy

WASHINGTON—Purchase of 968,877 lb. of dried whole egg solids for distribution to needy families was announced this week by the U.S. Department of Agriculture.

Prices paid for the eggs ranged from $1.355 to $1.3685 lb., the cost of this purchase totaling approximately $1,324,000. Total offerings amounted to 1,987,440 lb.

The action brings total purchases to 2,583,672 lb. at a cost of approximately $3,530,000 since the start of the program, USDA reports.

Pfizer Announces 'Beef-Maker' Program For Cattle Feeders

NEW YORK—A new "Beef-Maker" program designed to help cattle producers utilize the extra-gain benefits of both stilbestrol and Terramycin has been announced by Chas. Pfizer & Co., Inc.

The "Beef-Maker" program is a five-point feeding cycle system for the beef animal. Pfizer spokesmen say it is geared "to give producers maximum advantage of a growth-promoting hormone coupled with an antibiotic providing additional weight gains, plus important feed savings and disease protection."

The program is based on research and field tests conducted at the Pfizer Agricultural Research Center, Terre Haute, Ind., and by colleges, universities and commercial firms in the nation, the announcement states.

Under the "Beef-Maker" program, producers are urged to carry out five separate feeding and handling practices:

(1) Pfizer recommends implanting "Stimplants" in feedlot steers as they come off the trucks or cars. The company says this will provide "gains at less cost than with use of orally-fed stilbestrol. A summary of 20 trials has shown that implanting stilbestrol gives as much as 10-15% greater gains than when it is used in the feed."

(2) The firm recommends giving cattle access to bunks containing feeds fortified with high levels of Terramycin—"for effective protection against shipping fever." Such animal health feeds are available either as Terramycin A/D Crumbles

(Turn to PROGRAM, page 107)

Dates, Plans for Ohio Elevator Schools Told

COLUMBUS, OHIO—Plans for Ohio's annual elevator employee schools have been announced by the Ohio Grain & Feed Dealers Assn., sponsoring organization.

The first school will be held at Columbus March 1, and other schools will be held at the following locations and times: Massillon, March 2; Willard, March 3; Xenia, March 7; Wapakoneta, March 9, and at Napoleon March 17.

Topics for the meetings, that run from 9 a.m. to 4 p.m., are: "Safety at Work," "Employees Can Build the Business," "Profit Areas Needed by the Trade," "Late Seed and Feed Information," and "Care and Feeding of Customers." The cost is $4 per employee.

January Egg-Type Chick Hatch Up 39% From Record Low Mark of Year Earlier

WASHINGTON—Egg-type chicks hatched in January rose 39% from the record low hatch of January, 1960, according to the U.S. Department of Agriculture.

This was part of an over-all commercial hatcheries production of 200,128,000 during the month, up 9% from a year earlier. Production of broiler-type chicks was up 4% from January, 1960.

USDA earlier reported that farmers are planning to buy 12% more egg-type chicks this year than they did last year (Feedstuffs, Feb. 18).

The total number of egg-type chicks hatched, 32,906,000, was, however, down 8% from the hatch of January, 1959. All areas of the country registered increases in the January egg-type hatch with the East North Central leading the way with 6,206,000 as compared with 3,433,000 a year ago. Registering the lowest increase was New England with 2,136,000 as compared with 2,125,000 in 1960.

A comparison of other regions, the 1960 figure listed first and the 1961 figure listed second, follows: Middle Atlantic, 4,295,000, 5,117,000; west north central, 1,437,000, 2,169,000; south Atlantic, 2,897,000, 4,072,000; east south central, 1,181,000, 2,276,000; west south central, 2,197,000, 3,685,000; mountain, 464,000, 616,000, and Pacific, 5,658,000, 6,629,000.

And, eggs in incubators Feb. 1 indicate, according to USDA, that the February hatch will be considerably larger than the hatch in February, 1960, which was the smallest February hatch of record.

USDA figures show a February hatch of 44% more than a year earlier. The greatest increase indicated is for the east south central region with an 88% increase. Smallest increase is for the mountain area with a 1% increase expected.

Other percentage increases are: New England, 13; middle Atlantic, 36; east north central, 47; west north central, 77; south Atlantic, 65; west south central, 41, and Pacific, 14.

Broiler Chicks

Broiler-type chick production during January totaled 167,222,000, according to the report. Largest increase in hatchery production came in the west south central region with the figure up to 27,905,000 from 24,776,000 a year earlier. The biggest decrease came in the east north central region with a decline from 9,289,000 to 8,925,000.

Also on the lower side were: Middle Atlantic, down from 6,350,000 to 6,204,000, and mountain, down from 636,000 to 522,000.

Increases were registered as follows: New England, 9,368,000, 9,703,000; west north central, 7,250,000, 7,366,000; south Atlantic, 68,649,000, 70,957,000; east south central, 26,969,000, 27,479,000, and Pacific, 7,422,000, 8,161,000.

Eggs in incubators Feb. 1 indicate that the hatch of broiler chicks in February will be 9% larger than a year ago. The west south central region is expected to be up 20% while the east north central, the only region with fewer eggs in incubators, is expected to be down 6%.

Other increases are: New England, 7; middle Atlantic, 4; west north central, 7; south Atlantic, 8; east south central, 10; mountain, 10, and Pacific, 14.

Thompson-Hayward Assets Being Sold; Expansion Planned

KANSAS CITY—The board of directors of Thompson-Hayward Chemical Co., Kansas City, has approved an agreement to sell the firm's assets to Consolidated Electronic Industries Corp., according to announcement by C. T. Thompson, chairman, and R. S. Thompson, company president.

Thompson-Hayward Chemical Co. is a supplier, formulator, and manufacturer of chemicals for industrial, agricultural and feed supplement uses. Its products are sold throughout 24 midwestern states through 18 branch sales and warehouse outlets.

Total annual sales of Thompson-Hayward are reported to be in excess of $30 million. The sales operations "will be expanded to a national level."

A company spokesman said that no changes are contemplated in the operation or management. Thompson-Hayward's main offices will remain in Kansas City.

Terms of the transactions were not disclosed. R. S. Thompson stated that Thompson-Hayward would materially complement the product scope of the chemical, pharmaceutical, animal and plant health activities of Con Electron's subsidiary, Philips Electronics & Pharmaceutical Corp.

Anchor Serum Co., located in St. Joseph, Mo., and headed by Dr. F. M. Murdock, is a part of Philips Electronics & Pharmaceutical Corp.'s health activities.

FDA Issues Final Trace Mineral List

WASHINGTON—The Food and Drug Administration has issued a final list of trace mineral sources which are "generally recognized as safe" and are exempt from the food additives law.

The final listing removed limitations on levels of cobalt and copper, except that levels of these and other added minerals are to be "consistent with good feeding practice." Certain minor changes in nomenclature also were made in the final listing, FDA noted.

This list was issued after a considerable amount of communication between industry and FDA. The first proposals brought various objections, including protests against certain limitations which were specified. Other changes also had been requested. FDA said some views and comments were accepted in whole or in part, while others were rejected.

Following are the trace minerals and source compounds generally recognized as safe (all substances may be in anhydrous or hydrated form):

Cobalt—Cobalt acetate, cobalt carbonate, cobalt chloride, cobalt oxide, cobalt sulfate.

Copper—Copper carbonate, copper chloride, copper gluconate, copper hydroxide, copper orthophosphate, copper oxide, copper pyrophosphate, copper sulfate.

Iodine—Calcium iodate, calcium iodobehenate, cuprous iodide, 3,5-diiodosalicylic acid, ethylenediamine dihydroiodide, potassium iodate, potassium iodide, sodium iodate, sodium iodide, thymol iodide.

Iron—Iron ammonium citrate, iron carbonate, iron chloride, iron gluconate, iron oxide, iron phosphate, iron pyrophosphate, iron sulfate, reduced iron.

Manganese—Manganese acetate, manganese carbonate, manganese citrate (soluble), manganese chloride, manganese gluconate, manganese orthophosphate, manganese phosphate (di-basic), manganese sulfate, manganese oxide.

Zinc—Zinc acetate, zinc carbonate, zinc chloride, zinc oxide, zinc sulfate.

Quaker Oats Co. Earnings Increase

CHICAGO—An interim financial report by The Quaker Oats Co. shows that sales and income for the six-month period ended Dec. 31, 1960, were up from the same period a year earlier.

Net sales for the 1960 period were $167,692,744, compared with $163,170,191 in the same period of 1959. Net income for the 1960 period was $7,792,820, compared with $7,606,554 a year earlier. Net income per share for the period was $1.98, compared with $1.93 a year earlier (and $1.86 in the same period of 1958).

"As we have pointed out in the past," said Donold B. Lourie, president, "our first six months' earnings have normally been better than our second six months' earnings. This year our second six months will reflect larger advertising and merchandising expenses in obtaining national distribution of 'Life,' our new ready-to-eat oat cereal, and test-marketing several new products in the pet food, cereal and ready-mix fields. However, our volume is holding up well, and we see nothing in the immediate future to change that trend."

Asks Subsidies for Processed Oats Equal To Export Grain

CEDAR RAPIDS, IOWA — A request that the U.S. Department of Agriculture subsidize grain converted domestically into export oatmeal as well as oats for export as grain has been submitted to Secretary of Agriculture Orville Freeman by R. R. Proctor, vice president, National Oats Co.

Mr. Proctor urged "an immediate revision of the payment-in-kind export program to the extent that oats processed in the U.S. into products for export will be subsidized in an amount equal to the benefits available to foreign mills—without limitations as to the foreign destination of the finished products." He continued, "Our foreign competition has no limitations, and consequently there must be none for us."

The National Oats executive said this arrangement would: (1) keep production in the U.S., (2) strengthen the position of the U.S. brands in foreign markets, (3) increase U.S. export sales for dollars, (4) increase federal revenue from corporate and individual taxes, and (5) re-establish normal patterns of export trade.

As an example of what he termed "discrimination," Mr. Proctor cited a recent bulletin from USDA on the acceptance of a transaction on oats for export in February and March. He stated that under the transaction the cost of identical oats f.o.b. Minneapolis was 38% higher for his firm than foreign mills. Furthermore, he commented, through special freight rates this benefit is retained to the extent that raw materials cost f.o.b. a mill in Rotterdam, Netherlands, would be at least 29% less than his firm's f.o.b. New Orleans cost.

He continued, "With such a tremendous advantage in the cost of raw material in addition to lower wage and freight rates it is quite apparent that the mill in Rotterdam can prohibit the importation of our brands into Europe, British Isles and the Mediterranean countries and can substantially undersell our products in most other countries throughout the world."

USDA to Process Oats

WASHINGTON — Secretary of Agriculture Orville L. Freeman has announced that the U.S. Department of Agriculture is requesting offers to process and package rolled oats from Commodity Credit Corp. stocks for distribution with Section 32 funds to needy families.

CREDIT

(Continued from page 1)

should be extended, the speaker said, are these:

1. What are the feeder's costs of production? How does he control these costs?

2. Does he have experience in this type of feeding?

3. Does the operator have a tested management record?

4. Is there a good market available for the feeder's output?

Mr. Johnson said that one of the prime keys to credit extension for specific feeding projects is the criterion of cost of production. What good cost levels are is beginning to be known and understood rather widely among major feeders, he said. He cited figures for egg production of 24 to 36¢ doz. over the recent period and said that credit extension would be risky where costs are running above 30¢ doz. at this time. The high cost operators will be the first to fall by the wayside when market pressure develops, he pointed out. In beef feeding, he said, feedlots which produce beef at 18 to 19¢ lb. in these times are doing a good job, but those whose costs are in the 22¢ to 24¢ range on young animals are too high.

The security of the low cost producers is that their higher cost competition will have to give up first on a poor market and that prices will rebound rapidly enough to keep the low cost man out of trouble.

Mr. Johnson said some of the important plus factors in feed credit extension are a knowledge of markets and some degree of marketing control, good service personnel, depth in management and an overall company goal consistent with the facts of life in the industry involved. He said that bankers do not like to see projects which involve many new people in a financing deal.

"In a field already overcrowded with amateurs," Mr. Johnson said, "why bring in more? If a feed mill is financing 50 turkey growers and wants to expand, is it not wiser to concentrate on doubling the output of the best 25 than to go out and seek another 25 new ones?"

INDEPENDENT EGG PRODUCERS VANISHING?—The independent egg producer is not a vanishing American, Don M. Turnbull, secretary of the National Egg Council, Kansas City, told feed manufacturers, and he backed up his assertion with the results of a survey made among members of the council, which is made up of poultrymen who have an average of 6,000 layers. Mr. Turnbull said that 96% of the members of the council not only own their own birds but determine how or in what fashion their eggs will be marketed. (Details of the survey were published in Feedstuffs, Feb. 18, page 22.)

Mr. Turnbull said that although the number of laying flocks, as well as farms, has shrunk from 1954 to 1959, the decline of 36% in flocks compares with a 23% drop in farms. The mortality percentage among poultry flocks in the Middle West has been somewhat less than for the nation as a whole, being in the range of 22% to 31%. The North Atlantic decline has been 39%.

By far the largest decline has taken place among the non-white share croppers of the South, where the drop has totaled 41%. Farmers in that area boast a better standard of living, however, and the volume of egg production in the area is up 103% since 1954. While numbers of flocks have been declining the average flock size has been going up.

Taking the place of the vanishing flock owner is a new type of producer who will not only be highly independent but who will have a far greater understanding of the needs of his customers, Mr. Turnbull said, and the fact that these people have united to form a trade association of their own is indicative that they mean to fight for a place in the business of producing and marketing eggs.

While there has been a trend toward bigness in all business as well as in agriculture, size alone is not the all-controlling factor, Mr. Turnbull emphasized. "I think of several large egg assemblers who not over four years ago were considered the soundest operators in the U.S., but high labor costs have brought them to a point where drastic measures have had to be employed to stave off complete disaster. When your margin gets so thin that you must make each truck driver picking up eggs carry a stop watch to make sure that he is not spending too much time at each stop, you are indeed crowding your luck."

"We have heard that some large retail grocery units plan to set up their own egg factories. Put me on record as saying that when they do, they will find out how really unprofitable an egg business can be from the standpoint of production efficiency and from the standpoint of their profits at the retail level. We believe that the independent producer willing to recognize the demands of his market can stay in the battle. He will need to produce the proper product and coordinate his marketing effort. These are far from being formidable problems."

OHIO

(Continued from page 1)

George G. Greenleaf, Worthington, was renamed executive secretary, and George J. Forrester, Forrester Grain Co., Toledo, was renamed corporation secretary.

Trustees elected for two-year terms were: Mr. Pitstick; Harlan G. Thompson, Mt. Vernon (Ohio) Farmers Exchange; Leon M. McCorkle, Marion (Ohio) County Farm Bureau; R. E. Royer, Troy (Ohio) Grain & Supply Co., and Dale Seif, Waverly (Ohio) Feed & Grain Co. Mr. Moorhead, as retiring president, becomes ex-officio trustee.

Members of the association approved an amendment to the by-laws removing the clause setting annual membership dues and transferring the responsibility for establishing dues to the board of trustees. A revised schedule of annual dues which would be based on annual dollar volume of business instead of a flat fee is under study.

GOAL SETTING—Goal setting will help management to meet the challenge of business growth in a dynamic economy, Ray B. Bohnsack, manager, retail division, Farm Bureau Services, Inc., Lansing, Mich., told the group. His talk was entitled "Goal Setting Helps Management."

Mr. Bohnsack divides goals into two categories, short range and long range.

In the short range category are: annual replacement of fixed assets (truck or mill equipment replacement, amount of seasonal borrowing of capital for peak inventory and accounts receivable levels, advertising and promotion, employee pay adjustments and annual budget of operations. Mr. Bohnsack commented that the last item will incorporate all of the above items.

Under long range planning, he listed: company growth relative to area potential, personnel requirements, financial requirements, facility additions and new services.

Mr. Bohnsack spent considerable time on the area of budgeting saying that it helps the manager plan for sales and service in relation to market potential, return on investment and rising costs and how to meet them. He also said that a budget is something to measure performance against and that it will indicate need for corrective action.

He stressed the need for flexibility in a budget and suggested that a budget can build teamwork among employees if they are involved in the planning.

STORAGE "PROFITS"—An official in the grain industry told the group that industry last year was "shot down with headlines about 'profits' by means of a quirk of bookwork."

Robert C. Woodworth, Minneapolis, senior vice president of Cargill, Inc., said that government investigators of surplus grain storage "managed to convince millions of intelligent onlookers" that grain firms' profits were "fantastic" and exorbitant. This was done even though "you and I and our accountants know our profits have been reasonable indeed," he said.

"They did it by a device, a subtle technique, a quirk of bookwork that we didn't fully understand until too late. Their devastating secret was to reveal their findings in terms of 'profits on cost,' or rather, 'profits on direct costs,' not even including all the costs involved," he said.

Mr. Woodworth said that because grain elevator investment in plant and equipment is high compared to operating cost, the government's "peculiar calculations were bound to show that storage earned a high degree of 'profit based on cost.' In actual fact, the operation could have suffered a real dollar loss but still be used to headline 'truly golden profits,'" he said.

"The newsmen never learned the difference between that term and real profits," Mr. Woodworth said. "But if they had learned, and had insisted instead on obtaining our true profits, our doings would have been too unexciting to report. There would have been no shocking stories, no aroused public and no publicity for the committees and their probings would have died without effect."

The grain executives asked his industry to advise and aid the new administration's efforts for agriculture. "Their slippery problem is not so much to feed our people—for American farmers have done that magnificently—but to control and adjust and administer the forces of correction. And grain marketing," he said, "not itself the source of the problem, but the only decent answer, has been the most 'corrected' of all."

Mr. Woodworth warned the farm marketing and processing industry, which he said employs four persons for every three in farming, "either to determine the regulation of our businesses ourselves, through effective participation in government," or to see it done by others who haven't the knowledge or experience.

He hailed the "payment-in-kind" grain export programs as an example of industry-developed plans that "most observers have found to be the most sensible, logical and helpful of any federal effort in the field of agriculture."

He challenged the grain industry to help government evolve a policy for national food reserves and called for a survey to determine "real costs" of government-owned grain storage in order to "compare them to our efficient record."

Rapid Change

In his talk, Charles S. Force, president of the Grain & Feed Dealers National Assn., said, I" can assure you that your methods of operating your business during the '50's will not work in the '60's. Are you changing your business to meet our changing agriculture?

"Your farm customers in the future will be much larger and better educated and will want more service along with better products and prices. Analyze your customers, your market and your business and plan your business accordingly. To be average is not enough. To be average is easy. Plan your business to be above average.

"If you expect to have a strong aggressive organization in 1970, start planning now. Your farm customers and competition will not wait in this changing progressive agri-service field."

Mr. Force mentioned problems of the industry as being storage rates and Food and Drug Administration regulations. He also urged support of a bill which would allow business men to retain business earnings up to $30,000 or 20% of their gross income for growth capital.

He warned members about "The Emergency Feed Grain Program" submitted by Secretary of Agriculture Freeman to President Kennedy. He said, "If this bill is passed by Congress, it could depress feed grain prices, namely corn, and be ruinous to grain men. Farmers who don't cooperate would not only be denied price supports but the government would be allowed to sell as much surplus grain at market price as it chooses. This would depress and socialize our feed grain markets. Surplus feed grains accumulated under the bill would have to be sold within a year of their production. I feel that passing this bill would be a serious blow to the grain and feed industry as well as other segments of agriculture."

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The proof? We have just completed calculations on the results of *six* recent tests conducted in different parts of the country involving over 14,000 birds! The summary below highlights the pertinent facts and figures. See for yourself why Baciferm makes such good business sense (and dollars) in *your* broiler feeds. These results confirm the data from scores of tests run during the past several years.

	NUMBER OF BIRDS	EXTRA PROFIT PER THOUSAND BIRDS OVER CONTROL (4 GRAMS ZINC BACITRACIN PER TON)
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COLLEGE TEST #58	964	$13.95
COLLEGE TEST #60	300	$ 9.50
FEED MANUFACTURER'S TEST #78	12,000	$ 6.55
COLLEGE TEST #82	600	$21.85
COLLEGE TEST #83	150	$22.58

BASIS: market price of broilers 16¢ per lb.; feed cost 4½¢ per lb.; zinc bacitracin 7¢ per gram.

Doesn't it look like Baciferm is the buy for you? Baciferm's the buy for more and more feed manufacturers for both low and high level use. It's the economical antibiotic supplement for poultry and swine feeds. It contains the selectively-active antibiotic *zinc* bacitracin made exclusively by CSC under Patent No. 2,809,892. Baciferm's selective action kills dangerous bacteria fast but lets beneficial bacteria go right on producing vitamins and other valuable growth factors. College tests show that Baciferm gives full value in stimulating growth and reducing mortality. And – *zinc* bacitracin has the antibiotic stability manufacturers require.

One other thing: for stress and disease Baciferm can be added to each ton of *your* feed at $2 to $4 less than the cost of the tetracyclines.

ANIMAL NUTRITION DEPARTMENT

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Summaries of Swine, Sheep and Dairy Papers Presented at Southern Ag Workers Conference

By Dr. T. W. Perry
Purdue University

Last week's summary of papers presented at the Southern Section, American Society of Animal Production, covered only those papers concerned with the nutrition of beef cattle. This week's summary includes summaries of papers presented in the fields of swine and sheep, plus papers presented at the dairy section.

Swine

Cabell, C. A., and I. P. Earle. Effects of Synthetic Antioxidants and Flavonoids Present in Cottonseed on Gossypol Tolerance in the Rat. USDA.

Research was conducted with a pilot laboratory animal—the rat—to try to learn more about the nature of the growth depressing effect of cottonseed meal and gossypol on swine. The approach employed was to add gossypol to diets and then to study the interaction of other additives with gossypol in delaying rate of gain.

When gossypol was added to a ration containing soybean meal as a source of supplemental protein, no growth depression was shown. Similarly, when the antioxidant quercetin was added, there was no growth depression. However, when both gossypol and quercetin were fed with the soy supplemented diet, growth depression resulted. These results support the theory that levels of flavanol glycosides rutin and isoquercetin known to be present in cottonseed meal may affect the level of gossypol tolerated in animal diets.

McCampbell, H. C., D. M. Baird and K. T. Holley. Carcass Characteristics of Swine Fed Cottonseed Meals of Different Gossypol Levels vs. Soybean or a Mixture of Soybean and Cottonseed Meals. Georgia.

An experiment was designed in which various processed cottonseed meals containing varying levels of gossypol were compared with soybean meal for swine. Pigs fed soybean meal as a source of protein gained 1.60 lb. per day and those fed half soy and half cottonseed meal gained 1.51 lb. per day. However, those fed cottonseed meals processed in various manners gained from 0.82 lb. to 1.30 lb. per day, indicating none of the cottonseed meals tested were equivalent to soybean meal as a source of supplemental protein for swine. The cottonseed meal-fed pigs had less loin eye per 100 lb. carcass weight than those fed soybean meal.

It is hoped that some day cottonseed meal can be made a better source of supplemental protein for swine. However, this problem apparently is a tough one to solve.

Earle, I. P., R. N. Brake, R. B. Briese, J. W. Gilbert, D. P. Morgan and J. W. Stevenson. Biochemical Observations on Pigs with Parakeratosis. USDA.

Results are reported on observations on blood chemistry, on alkaline phosphatase activity of tissues and on the allantoin-uric acid ratio in the urine, which were made on pigs used in the study of parakeratosis (pk). After the production of pk., pigs were fed the pk. diet with and without supplementary zinc.

Alkaline phosphatase activity in serum appears to be very sensitive to dietary zinc, increasing in animals shifted from low zinc diet to a high zinc diet, and decreasing in animals shifted from "normal" diet to a pk. diet. Alkaline phosphatase activity in small gut, liver and kidney appears to follow in general the same trend as that in the serum. The proportion of allantoin to uric acid excreted in the urine seems to be related to the development of pk.

Some chemical observations of things that happen when parakeratosis occurs are reported. It is from basic information such as this that leads are found which show the "hows" and the "whys" of this strange malady in pigs. Until we learn more about parakeratosis in swine, extreme care must be exercised in the balance of calcium and zinc supplementation of rations.

Buescher, R. G., S. A. Griffin and M. C. Bell. Copper Availability to Swine. Tennessee, Oak Ridge.

Swine were dosed with labeled copper in the form of three compounds—copper carbonate, copper oxide and copper sulfate—to study the comparative availability of copper from the three sources. Blood and plasma concentration of the Cu^{64} was similar for the three treatments. The major portion of the labeled copper in the blood was in the plasma portion.

There was no difference in fecal excretion of copper. Retention of labeled copper from the three compounds was relatively high, ranging from 34% to 36%. Apparently, the availabilities of copper from copper carbonate, copper oxide and copper sulfate for swine are similar.

Williams, Leon and Bill G. Diggs. Evaluation of Two Creep Rations and Two Ages of Weaning Pigs. Mississippi.

Litters from 28 sows were used to evaluate two pelleted creep rations and two ages of weaning. Ration 1 was an 18% protein ration containing rolled oats, sugar, dry skimmilk, corn, soybean meal, vitamins and minerals. Ration 2 was an 18% corn-soybean meal ration fortified with vitamins and minerals.

In the factorially designed experiment, one half the pigs on each ration were weaned at 6 weeks and one half were weaned at 8 weeks. Based on 8-week data, the pigs weaned at 6 weeks consumed twice as much feed as those weaned at 8 weeks, or an average of 0.48 lb. per day vs. 0.25 lb. per day. Rates of gain for the four treatments ranged from 0.48 to 0.58 lb. per day with no statistically significant difference.

Based on these data, the complicated more expensive formula gave essentially the same results as the less complicated, less costly ration.

Thrash, D. M., A. M. Mullins and C. W. Newman. Mixed vs. Free-Choice Rations for Pigs Using Three Complete Supplements. Louisiana.

Two experiments were conducted in which three supplements—soy, soy-meat scrap and soy-meat scrap-fish meal-cottonseed meal—were compared. In addition, complete mixed ration vs. free choice feeding of pigs was compared.

Rates of gain were not significantly different when either method of feeding or the three supplements were compared. Pigs fed free choice were slightly more efficient and gained more economically than those on complete mixtures, regardless of the supplement used. Among the complete feeds, the soy supplement was most economical. In the free choice feeding, there was some tendency for over consumption of soy protein.

Handlin, D. L., J. R. Ables, D. H. Kropf and R. F. Wheeler. The Effect of Finishing Rations on Gains, Feed Efficiencies and Carcass Characteristics of Swine. Clemson.

Pigs were fed from 69 lb. to a market weight of 200 lb. on balanced rations in which several sources of grain were compared.

Pigs fed corn made significantly faster gains than those fed barley, milo, or ½ corn and ½ oats. Hogs fed barley tended to produce leaner carcasses, but this may have been a reflection of the significantly slower rate of gain of the barley-fed hogs. Backfat from hogs fed milo or barley had the lowest iodine number. Hogs self-fed in drylot gained significantly faster than those self-fed on forage.

It appears that corn is still the number one grain for swine and that the known grains today must be rated against corn as the standard of reference. Of course wheat is slightly superior to corn for swine, but the human demand for wheat does not make it competitive price-wise.

Backus, William R., Bryan Baker, Jr., and Bill G. Diggs. The Effect of Various Management Practices as They Affect Rate of Gain, Feed Efficiency and Certain Carcass Characteristics of Swine. Mississippi.

The several management practices compared included: Castration at 40 lb. vs. castration at 160 lb.; pasture vs. concrete, and bulky ration (from 160 lb. to 200 lb. market weight) vs. concentrated ration all the way.

Pigs fed bulky ration at the end of the finishing period and pigs on pasture had less backfat, larger percent of lean cut yield and larger loin eye than pigs fed the concentrated ration and pigs raised on concrete. There were no significant differences in feed efficiency or rate of gain for pigs on concrete vs. pasture and for pigs on the bulk vs. concentrated. There were no significant differences in the usual comparisons between pigs castrated at 40 lb. vs. those castrated at 160 lb.

This is rather unusual that carcass quality can be affected without changing rate of gain when pasture vs. concrete and bulky vs. concentrated rations are compared. Usually a delay in rate of gain is about the only way to make leaner carcasses for any given set of pigs.

Thrasher, D. M., Paul B. Brown and Sam L. Hansard. Value of Sugar Cane Bagasse "Fines" and Molasses in High Fiber Rations for Pregnant Sows. Louisiana.

Bagasse "fines" is an inexpensive source of fiber in areas producing sugar cane. Therefore, this material was tested in high fiber rations for pregnant sows. Preliminary research indicated that a self-fed ration containing 30 to 40% "fines" and about 30% molasses would be necessary to limit the gains. Sows fed 30% "fines" in their ration consumed 13.3 lb. per day, gained most rapidly and had the highest daily feed cost. Those fed a ration containing 40% of fines consumed 8.7 lb. per day and had the lowest cost. The performance of sows receiving bagasse "fines" and molasses was very satisfactory, but not quite equal to the performance of sows hand-fed the regular ration.

Bagasse is another product containing a great deal of fiber which may well be used to limit the amount of feed a sow may get.

Jordan, C. E., W. P. Worth, and T. M. Means. The Effects of a New Antibiotic—Tylosin—on the Reproductive Performance of Sows. Eli Lilly.

Quite high levels of tylosin—up to 200 gm. per ton of complete ration in some instances—were fed to sows prior to and during pregnancy. Tylosin treatments during the entire reproductive cycle appeared to increase conception rates, average birth weight of pigs and average pig weight at 2 and 3 weeks of age. Tylosin-fed sows weaned a higher percentage of pigs than those not fed tylosin.

This is another example of the truly "miracle" group of drugs known as antibiotics. Although we know little about their mode of action, antibiotics have become such an important part of animal agriculture.

Warnick, A., V. M. Caldwell, H. D. Wallace and A. Z. Palmer. The Effect of Ambient Temperature on Ovulation and Embryonic Survival in Gilts. Florida.

An interesting environmental study is reported in which the effect of temperature on reproduction in swine was studied. One of the outcomes reported was that gilts at either continuous or 3-day post-breeding 90°F. had an average of 10.4 embryos compared to 13.6 embryos in gilts at either continuous or 3-day post-breeding 60°F. The data indicated that a high temperature of 90°F. may be more harmful to embryonic survival after 3-days post-breeding than a high temperature previous to 3-days post-breeding.

The whole field of environmental physiology and its effect on farm animals is a virgin field of research which needs exploring in order to apply some of its mysteries to animal agriculture.

Wilson, S. P., J. A. Whatley, Jr., and R. B. Harrington. The Effect of Number of Pigs Farrowed per Litter on Number Weaned, Birth Weight and Weaning Weight. Oklahoma.

How large a litter of pigs is the most desirable size? We certainly know that a sow normally has fertilized more eggs than she gives birth to pigs. Physiologists and nutritionists have vied to learn how to help the sow give birth to more pigs. Perhaps it would not be desirable to save too many of the eggs for the ultimate birth of pigs, based on our present knowledge of how to feed and manage them.

In this work, the number of pigs weaned per litter increased as the number of pigs farrowed increased to a maximum of about 8 pigs weaned from litters of 11 to 14 pigs farrowed. Litters of 15 to 18 pigs farrowed resulted in fewer pigs weaned than litters of 11 to 14 pigs farrowed.

The higher mortality in the larger litters appeared to be related to decreased birth weights of pigs and limitations of sows in nursing large litters. Both of these limitations can well be attributed to our limited knowledge as to how best to feed the sow during pregnancy and lactation.

There is not much point in our striving for larger litters of pigs born until we learn a whole lot more about the physiology and nutrition of the pregnant sow and the nutrition of the lactating sow.

Sheep

Wilson, R. L., W. A. Case, R. L. Edwards and D. H. Kropf. Effects of Different Levels of Tetra Alkyl Ammonium Stearate in Creep Rations for Lambs on Winter Grazing. Clemson.

Suckling lambs quartered on winter oats pasture were assigned to

EDITOR'S NOTE: *This is the second of two articles summarizing nutrition papers presented at the Southern Section, American Society of Animal Production session of the Feb. 6-8 annual meeting of the Association of Southern Agricultural Workers at Jackson, Miss.*

one of three creep rations: (1) A ¾ in. pellet composed of 55% corn, 35% oats and 10% soybean meal; (2) same plus 0.5 gm. tetra alkylammonium stearate (TAAS) per pound of ration, or (3) 1.0 gm. TAAS per pound ration. There was no significant effect of either level of TAAS on daily gain, feed efficiency, dressing percentage, carcass cooler shrinkage, or other characteristics.

TAAS is a chemobiotic that has given results—that is, sometimes there has been an apparent response in rate of gain from including it in the diet of ruminants, whereas in other cases there has been no stimulation in rate of gain.

Baker, Bryan, Jr., R. A. Edgar and Sidney J. Long. The Effects of Ovarian Hormones on the Performance of Lambs Grazed on Winter Pasture. Mississippi.

Data from 3 experiments involving over 1,800 lambs grazed on winter pasture showed a consistent and significant increase in rate of gain of lambs from the implantation of diethylstilbestrol or Synovex.

This information is not especially new since we have known for several years that such practice would increase the rate of gain of lambs. However, under the conditions of this experiment, no adverse effect on carcass quality was found from the use of diethylstilbestrol. Many research workers have reported a lowering in carcass quality as the result of the use of diethylstilbestrol with lambs.

Neathery, M. W. Fattening Late Spring Lambs During the Summer Under North Georgia Conditions. Georgia Mountain Station.

Three groups of lambs were compared for their performance on: (1) Orchard grass-ladino pasture, no dry feed (2) pasture, plus cracked corn or (3) drylot with typical fattening ration. Best performance was with lambs fed corn on pasture and poorest gains were for those on pasture without corn. Amazingly enough, those on pasture with no grain gained an average of 0.30 lb. per day. The net return per lamb was much higher in the lot fed corn on pasture ($3.78) than for those fed in drylot (55¢) and for those fed nothing on pasture (24¢).

This research brings out two points in regard to lamb feeding: (1) It's hard to make lambs grow and fatten on pasture without supplementation, and (2) it's pretty difficult to feed lambs in drylot and show much profit.

Dairy Cattle

Bush, L. J., G. V. O'Dell and M. G. Yang. Comparison of Different Calf Starters for Early Weaned Dairy Calves. Oklahoma.

Male Holstein calves were used in an experiment to compare cracked corn and chopped oats with steamed crimped corn and steamed crimped oats in a complex calf starter. Also, the effect of adding Agrozyme to each of the treatments was studied. The respective calf starters were fed ad libitum from the time the calves were started on experiment at 4 days of age and constituted the sole diet after the calves were weaned abruptly at 28 days of age.

No evidence was obtained to indicate any advantage in steaming grains used in a calf starter, or in adding supplemental enzymes to the starter ration. Average daily gains for the 16-week period for the calves were: Steamed grains and Agrozyme, 1.67 lb.; steamed grains with no added enzymes, 1.62 lb.; chopped grains and Agrozyme, 1.48 lb.; chopped grains with no added enzymes, 1.68 lb.

Apparently a calf at this age is endowed with a pretty good supply of digestive enzymes and gains little from enzymatic assistance with its feed.

Swanson, E. W., L. M. Carpenter and R. O. Thomas. The Importance of Trace Minerals in Calf Starter and Milk Replacer. Tennessee.

An experiment was set up to determine the value of supplementing the rations of calves on a limited milk-calf starter plan with trace minerals (cobalt, copper, iodine, iron and manganese). In a factorial type experiment, four equalized groups of Holstein and Jersey calves were started at 1 week of age as follows: (Lot 1) Plain milk, plain starter, hay; (Lot 2) mineralized milk, plain starter, hay; (Lot 3) plain milk, mineralized starter, hay, and (Lot 4) mineralized milk, mineralized starter, hay.

There were no significant measurable benefits from adding trace minerals to either milk or starter for the calves in this experiment.

A chemical analysis of the rations which were not fortified with trace minerals would seem almost deficient or borderline in some of the trace minerals. However, free choice alfalfa hay was available and this may well be the key source. Alfalfa hay is recognized as a good source of trace minerals. This research emphasizes the fact that it is not good practice to include many ingredients in a ration on the assumption that "it might just be good for the animal." We need to know more about the composition of the natural feedstuffs in order to recognize wise supplementation.

Miller, W. J., and C. M. Clifton. Gradual vs. Abrupt Weaning of Dairy Calves from a Limited Level of Milk Replacer. Georgia.

Beginning with the sixth day of age, Holstein and Jersey calves on the abrupt program of weaning received 9 and 7 lb. of milk replacer for 33 and 37 consecutive days. Holstein and Jersey calves on the gradual weaning program were fed the same total amount of milk replacer over a period of 45 days. Their daily feeding rate began at 8 and 6 lb., built up to 9 and 7 lb., and then tapered off to 3 lb. at the end of the feeding period.

No significant difference was found between the systems in rate of gain, starter consumption, incidence of diarrhea or duration of diarrhea.

Dairymen possibly can save themselves considerable time and effort by adopting an abrupt milk replacer feeding program in place of a gradual program.

Johnson, J. C., Jr., F. E. Knox and B. L. Southwell. The Relative Feeding Value of Coastal Bermuda Grass Silage and Corn Silage for Lactating Dairy Cows. Georgia Coastal Station.

Corn silage gave significant increases in average daily milk production per cow over Coastal Bermuda grass silage in two feeding trials. Silages used in both trials were made in different years and were the sole roughages fed. For both trials liberally fertilized Coastal Bermuda grass was ensiled when 16 to 18 in. tall with 8 lb. of sodium bisulfite added per ton.

(Turn to SUMMARIES, page 98)

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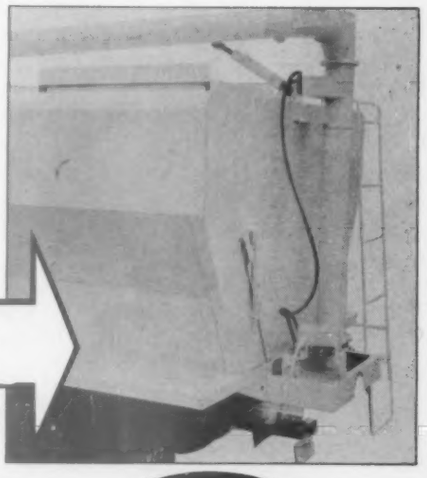

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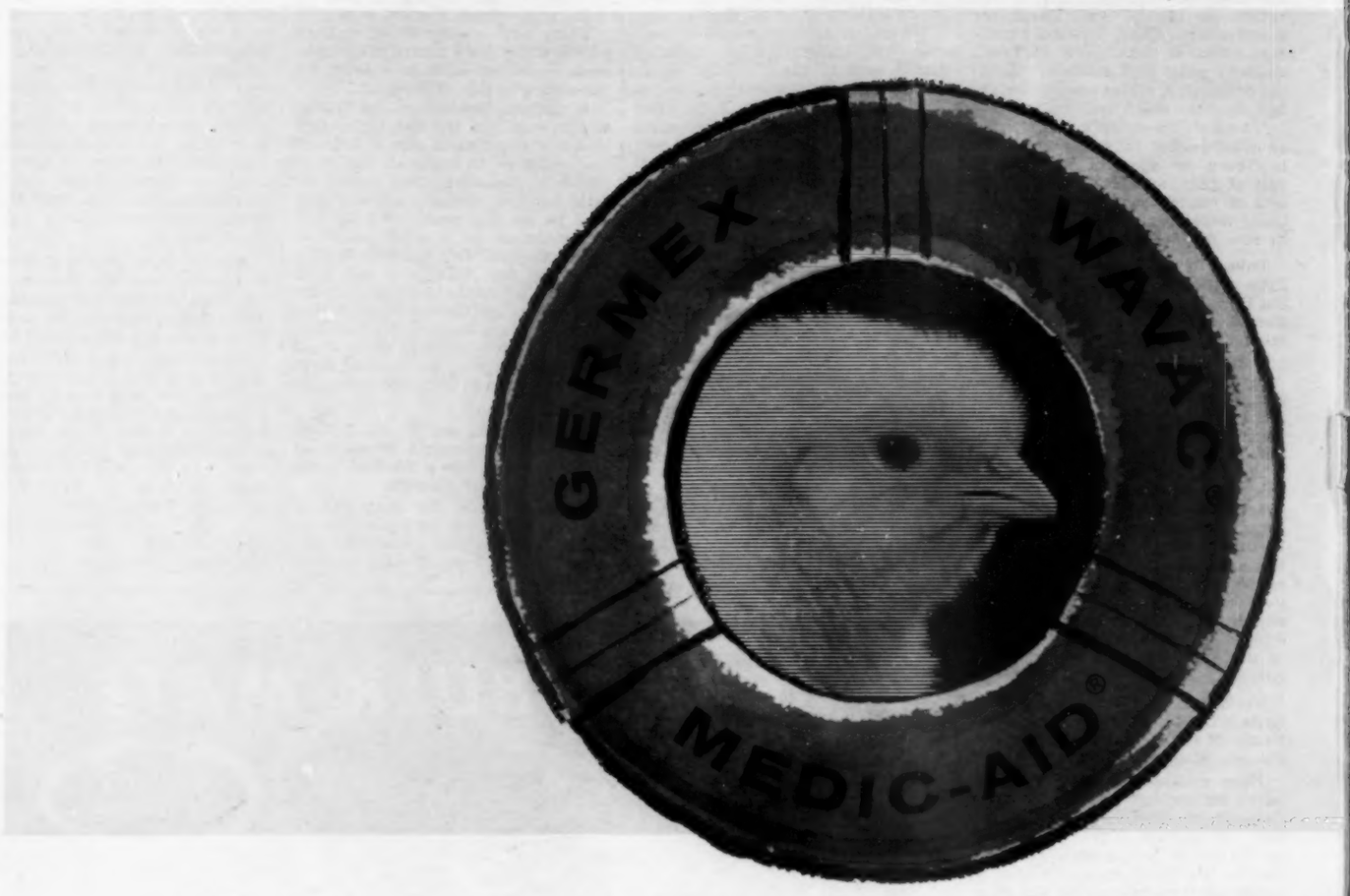

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CAPITAL COMMENT

BY JOHN CIPPERLY

Farm Leader's Views

WASHINGTON — Deserving of calm study are the statements made on the Senate floor by the Republican farm leader, George D. Aiken (R., Vt.) following the Senate agriculture hearing wherein the former Minnesota University economist, Willard Cochrane, appeared to submit his views on a farm program.

Mr. Cochrane has been identified as the author of the Kennedy farm program which he announced during the campaign. This program proposed that all farm commodities be brought under a supply-management concept, using parity of farm income as a base.

The Aiken statement is a reserved commentary on the flighty ideas that emanate from the halls of the universities and fails to take into consideration the practicalities of the farm economy as it meets the market place and the processing interests who ultimately distribute the production of the farm to the consumer.

This comment is designed to urge even the most busy businessman in the feed and grain industries to read Sen. Aiken now.

Excerpts Quoted

Here are some excerpts from the Senator's statements:

" . . . Whatever plan is devised for the American farmer not only has its effect on all the people of the U.S. but most of the people of the rest of the world as well.

"There are seven different facets which have to be considered in formulating any national farm program. These are: (1) Effect on the farmer, (2) effect on the consuming public, (3) effect on the community, (4) effect on the national economy, (5) effect on the national security, (6) effect on international relations, and (7) effect on our government."

The farmer: " . . . An effort to solve the farmer's economic problem by adjusting price alone could well lower his income and his living standards. It is net income which determines the farmer's welfare and net income is determined by price times quantity less costs.

"Over 10 years ago experts in the Department of Agriculture found that if a farmer produced a full crop of 100% and sold it for a 70% of parity price he would have more net income than if he produced 70% of a crop and sold it for a 100% price.

"This loss of income would be due to the fact that in these days of high capital investment, overhead costs such as taxes, depreciation and insurance do not go down with reduced production and the costs of producing a bushel of grain or a pound of meat may be drastically increased.

"In the event that reduced production is brought about through crop land retirement, the farmer must also consider the effect on the farm and the regular markets which may have depended upon him to deliver a relatively uniform supply each year."

The consuming public: "If we could restrict any increases in consumer prices to the increase necessary to return to the farmer a fair price for his product the result in increased costs to the consumer would be negligible.

"That happy solution is not in the cards, however. When the price of milk to the dairyman goes up ½¢ a quart, the price to the consumer rises 1¢. And this increase in the price of milk is about the minimum percentage of increase which the consumer may expect from any rise in farm prices.

"The spread between farm and consumer prices is at an all-time high and shows every sign of going higher . . .

"A considerable part of the money appropriated by Congress for farm research is actually spent for research for the benefit of the consumer. . . . There may be more savings to be made in processing and merchandising food products, but the public cannot and should not expect further subsidization at the expense of the farmer."

The rural community: "A reduction in the permissible production of a community can and would result in lower income, loss of business for mercantile concerns, less employment and possible loss of population, thus adversely affecting state and federal contributions to local school, highway and other public programs.

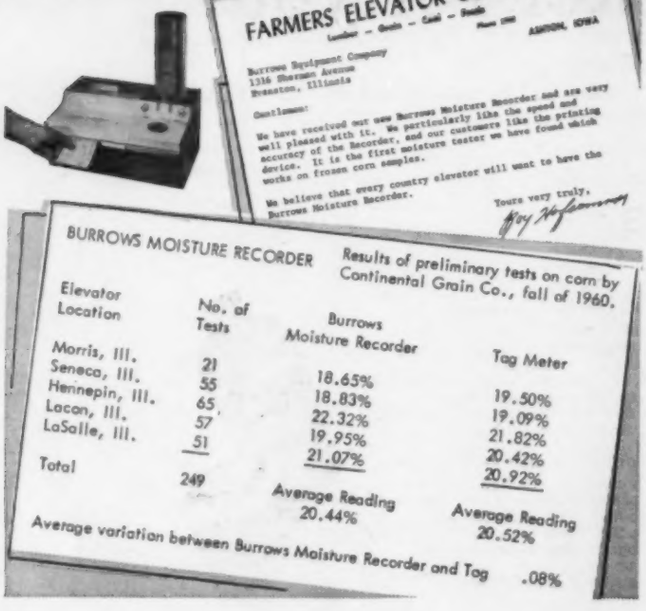
"It is entirely possible that reduced production might also result in the loss of local processing plants or at least compel their merger with those of other similarly affected communities.

"Since reduced amounts would reduce the amount of business to be done by local storage and marketing farm cooperatives the cost of operating such cooperatives would be bound to increase for each unit of production.

"The U.S. was founded on the rural communities that make up the backbone of the nation. While the wealth created in these areas now tends to concentrate in the cities, the fact remains that the strength of the na-

(Turn to CAPITAL COMMENT, page 99)

Accurate-because moisture is computed electronically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We believe that every country elevator will want to have the Burrows Moisture Recorder.
Yours very truly,
BURROWS MOISTURE RECORDER
Results of preliminary tests on corn by Continental Grain Co., fall of 1960.
Elevator Location
No. of Tests
Burrows Moisture Recorder
Tag Meter
Morris, Ill. 21 18.65% 19.50%
Seneca, Ill. 55 18.83% 19.09%
Hennepin, Ill. 65 22.32% 21.82%
Lacon, Ill. 57 19.95% 20.42%
LaSalle, Ill. 51 21.07% 20.92%
Total 249
Average Reading 20.44%
Average Reading 20.52%
Average variation between Burrows Moisture Recorder and Tag .08%

Test, after test, after test proves that the Burrows Moisture Recorder has the approval of the most critical grain men for accuracy. Users are enthusiastic about the many time saving features. Only the Burrows Moisture Recorder offers you all these advantages!

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RESEARCH

Pillsbury's vital "growth factor"

by E. A. BLASING, *Director of Research and Nutrition, Feed Division, The Pillsbury Company*

Pillsbury's "demanding feeders" call research the most important ingredient in every familiar red, white and blue bag. In fact, there is a strong feeling of mutual respect between our nutritionists and our customers. The reason? Simply this—each Pillsbury nutritionist is *a scientist who thinks like a feeder.* He's as critically aware of the tough farm economy as he is familiar with feed and production efficiency.

Because Pillsbury's research "watch dogs" are constantly alert to economic danger signals, chances are the feeder will have an effective counter attack before the "squeeze is on." This one-jump edge makes the Pillsbury nutritionist a real force behind an improved farm economy.

There's probably no better example of the nutritionist's imaginative skill and sound judgment, than Pillsbury's "climate blended" concept.

"Climate blending" combats natural stresses

Pillsbury's "climate blended" rations give the poultryman a practical answer to Mother Nature's challenges of climate and weather. Simply by adjusting the protein-energy balance, each ration is equipped to conquer stresses due to seasonal change. Now, new discoveries in recommended levels and types of Vitamin A provide a Pillsbury fed flock with even greater protection.

Research—science with calloused hands

Each succeeding development opens doors to further gains in feed efficiency. The "climate blended" study covers the entire "life cycle" of the bird, which includes breeders and broilers as well as laying flocks.

Where do these nutritional explorations end? They don't at Pillsbury! Our Research Farms are constantly refining the original "climate blended" idea. Right now our scientists are practicing what they preach and are coming up with astonishing results. New approaches to amino acid balance and protein-energy requirements promise even greater feed efficiency and better production methods.

This is the true role of science at Pillsbury. Research is a sound, hard-headed approach to all farm problems. Principally, nutritional advances are geared to more economical methods for producing meat, milk and eggs. But, since all farm problems are closely related, any meaningful study in nutrition must consider the feeder's continual cost-price burden.

That's why, at Pillsbury, we call research the one vital ingredient in every bag of feed. And why every feeder and feed dealer can feel confident that research is always a big value when it's covered by the Pillsbury barrelhead.

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Letters to the Editor

Support for Stand Taken on Cholesterol

To the Editor:

It would seem to me that much can be made in support of the stand taken by the dairy and poultry industry in refuting the argument that cholesterol is virtually the only villain involved in causing coronary heart attacks and strokes by publicizing the report issued Jan. 27, 1961, (by Dr. Meyer Friedman and his associates of Mt. Zion Hospital, Carmel, Cal.), on a recently completed heart research project.

I suspect that by this time your office has received this report in substance but just in case you haven't, I'll attempt a brief summary:

Initially "tiny bits of metal or rubber were placed in rabbit arteries to start the hardening process"; blood clots formed within 72 hours. "Cholesterol and other fatty substances accumulated under the clots; fibrous tissue formed around the cholesterol producing a hump at the site. Then a second blood clot formed at the hump to close the artery."

Of great significance, I think, is the fact that these investigators found that clots formed in arteries carrying low as well as high levels of cholesterol in the blood stream. The investigator said "the steps involved in this project seem to offer a new explanation for the process that leads to coronary heart attacks and strokes."

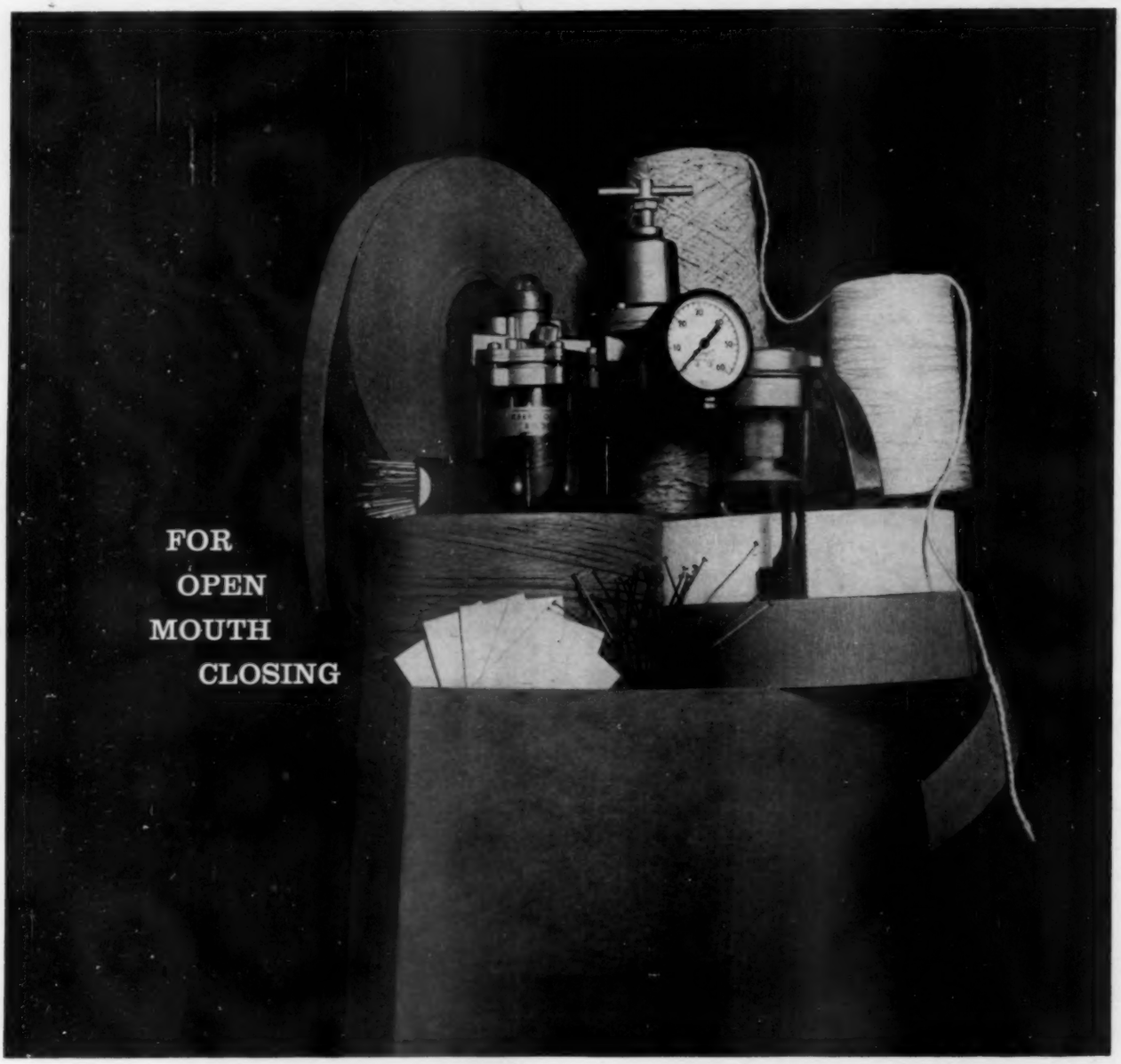
I do believe this work of able Dr. Friedman and his associates is the most enlightening we've seen in years in heart and cholesterol research. Let's hope it will spur further research and eventually a means of eliminating the accumulation of foreign bodies in the blood stream.

Anything that correctly and honestly minimizes the role of cholesterol as the all important villain is bound to be reflected more favorably towards certain of our dairy products.

I first saw the results of this research in the Jan. 28 issue of The St. Petersburg Times.

Dr. L. N. Gilmore
809 East Gull Blvd.
Indian Rocks Beach, Fla.

P.S. I have read your great publication for years and expect to renew subscription when I return to my home in East Aurora, N.Y. Until I retired in 1959 I was vice president and director of research for Maritime Milling Co., Buffalo, N.Y.



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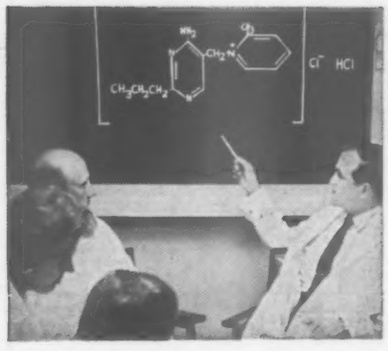

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AMPROL...the latest addition to the Merck family of coccidiostats...combines a highly desirable balance of efficacy and safety. Having undergone intensive study and testing under the most advanced methods, it promises to be a truly effective coccidiostat for use in broiler feeds. It is the first coccidiostat evaluated against 44 strains of seven species of coccidia.

UNIQUE ANTICOCCIDIAL ACTION

The chemical structure of AMPROL differs completely from that of any other coccidiostat in the industry's history – it is similar to that of thiamine. At recommended use levels it appears to interfere with the thiamine metabolism of the coccidia, but does *not* affect the normal thiamine metabolism of the chicken, a mode of action entirely different from any other coccidiostat.

SIGNIFICANT COMMERCIAL ADVANTAGES

The value of AMPROL can be measured by its efficacy and its favorable margin of safety...plus the fact that it permits attractive weight gains and feed conversions. Tests to date have not shown any significant ability of coccidia to develop resistance to AMPROL – indicating a most promising role for years to come – in the management of coccidiosis.

EFFICACY

Exhibits important activity against major coccidia – especially *Eimeria tenella* and *E. necatrix,* under a variety of conditions. In laboratory comparisons with mixed infections of cecal and intestinal coccidiosis, AMPROL gave more protection than other coccidiostats.

PRODUCTION PERFORMANCE

Excellent growth and feed efficiency. After a year of experiments against control flocks, under practical commercial-type conditions, broilers on AMPROL showed higher final weights with favorable feed conversions.

CONSISTENT PERFORMANCE

Tested birds were exposed to four consecutive generations of ten virulent strains of *E. tenella* which did not develop significant resistance to AMPROL.

SAFETY

Well tolerated up to four times suggested use-level of 0.0125%. Side effects noted above 0.05% level are specifically related to thiamine-depletion and are quickly reversible, a simple corrective procedure unique with AMPROL. Feeding trials indicate recommended use-levels will not affect egg quality, egg production or hatchability. No toxicity observed when feeds containing AMPROL are fed to other animals.

USE-LEVELS

Recommended use-level for most field conditions is 0.0125%. Where adverse conditions and less sensitive strains of coccidia prevail, use the 0.025% level.

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For further information, contact your Merck representative or write to Agricultural Products, Merck Chemical Division, Merck & Co., Inc., Rahway, New Jersey.

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Is There a . . . *Specification Egg Contract* . . . In Your Future?

By Dr. L. A. Wilhelm
The Quaker Oats Co.

Specification production is best defined as producing to the exact specifications of a particular market—as opposed to producing "to market."

In the case of specification production in eggs it may be dark yolked eggs for breakers or light yolked eggs for the table trade. Contracting is becoming increasingly important in both, to control not only quality but quantity flow of product.

Contracting has both advantages and disadvantages for both the producer and the contractor. These have been partially ironed out through years of experience in the broiler business. They are less well understood in the case of contracting for egg production.

The producer is interested in egg contracts because: (1) Capital requirements are increasing, (2) specialization demands market orientation, (3) specification production is increasing, (4) he can control production risks and share market risks and (5) he can tie, and be tied to, a market.

The contractor has similar reasons for contracting: (1) A return on capital, (2) increased sales (or purchases), (3) reduced unit costs by volume operation, (4) improved bargaining (selling) position by volume and (5) manpower specialization.

Types of Contracting

The types of egg contracting range from "hen renting" to "hen leasing" but the secrets in all egg contracts appear to be cash, quality and initiative controls. The controls, as well as realistic figures on the costs of producing eggs are presented in tabular form.

Necessary considerations in egg contracting include: (1) Field supervision; (2) minimum unit size—per flock and per project; (3) planned obsolescence (13-14 months of production); (4) maximized protection—vaccinations, disease control; (5) uniform placement—uniform product flow; (6) capital requirements, and (7) financial stability.

I. WHY EGG CONTRACTS?

Producer	Contractor
A. Increasing capital requirements	A. Return on risk (investment) capital
B. Specialization demands market orientation	B. Increased sales (or purchases)
C. Specification production	C. Reduce unit costs by volume operation
D. Can control production risks, share market risks	D. Improved bargaining (selling) position
E. Tie, and be tied to, a market	E. Provide manpower specialization

II. CONTRACTING FOR PULLET GROWING

A. Pullet production weakest link in egg production chain.
B. "Proper" scheduling of orders, placements, vaccinations and inoculations.
C. All basic costs must be covered.

III. WHAT DOES IT COST TO PRODUCE AN EGG TYPE PULLET TO LAYING AGE?

Costs	Per Bird ¢	Per Doz. Eggs* ¢
A. CASH COSTS		
1. Day old chick (pullet)	35-52	2-3
2. Feed	50-100	3-5
3. Fuel-litter vaccination-medicine-insurance	12	⅜
Total Cash Costs	97-1.64	3⅓-4⅓
B. LABOR	12-14	⅜-1⅓
C. MONEY, Interest (5%), deprec.-repair (6%)	11	⅜
Additional Grower Costs	23-35	1⅓-1⅝
Total (24 weeks)	120-199	6.8-10.4

*Assuming 90% pullets housed of chicks bought and 20 doz. eggs (240 hen housed average).

IV. CONTRACTING FOR EGG PRODUCTION

A. "Renting": Contractor owns hens. Provides ready-to-lay pullets to grower.
   1. Grower pays for all laying feed plus 8c per dozen eggs produced.
   2. Dealer takes all eggs at agreed upon price or market.
B. Contractor pays for growing pullet and producing eggs.
   1. Contractor provides all feed, medication, etc.
   2. Contractor takes all eggs.
C. Contractor pays for egg production only.
   1. Contractor provides all feed, medication, etc.
   2. Contractor takes all eggs.
D. "Leasing": Producer owns all hens but leases them to contractor—on producer's farm—at 10c a month per hen.
   1. Contractor provides all feed, medication, etc.
   2. Contractor takes all eggs.
   3. Contractor pays for egg production.

In this outline of a talk presented at the Institute of American Poultry Industries Fact Finding Conference at Kansas City Feb. 10-12, Dr. Wilhelm (right), director of poultry development and market research, The Quaker Oats Co., Chicago, shows the many possible controls, incentives and realistic cost figures involved in production of eggs by specification and under contract.

V. WHAT DOES IT COST TO PRODUCE A DOZEN MARKET EGGS?

Costs	Per Bird ¢	Per Dozen Eggs* ¢
A. CASH COSTS		
1. Pullet	120-199	6.8-10.4
2. Feed	300 400	15-20
3. Litter, vaccine, medicine, insurance	18	0.9
Total Cash Costs	4.38-6.17	22.7-31.3
B. LABOR	50	2.5
C. MONEY, Interest (5%), deprec.-repair (6%)	30	1.5
Additional Grower Costs	80	4.0
Total (for 13 mos. of production)	5.18-6.97	26.7-35.3
Less salvage value of hens	—20.0	—1.0
TOTAL	4.98-6.77	25.7-34.3

*Calculated on the basis of 20 dozen eggs per hen housed, a feed efficiency of 4.5 and a feed price of $68-88 ton.

VI. CASH, QUALITY AND INITIATIVE CONTROLS NECESSARY IN EGG CONTRACTING

A. Cash
1. Mortgages on all chickens
2. Insurance on all chickens
3. Logical, clearly defined day of settlement or repayment

B. Quality
4. Percentage good pullets housed
5. Clean eggs
6. Percentage Grade A or large eggs

C. Initiative
7. Feed efficiency—growing and production
8. Egg production
9. Payment in relation to net sales price of eggs

VII. PULLET GROWING BONUS SUGGESTIONS

A. Base: 1c weekly per good pullet—payable monthly
B. Bonus: ..c per good pullet in excess of ..% of chicks started
C. Feed efficiency
Feeding Program—(lb. per pullet)*

Bonus c per Good Pullet	Ration Restr.	Ration f.f.	Low Energy f.f.
0	Above 17	Above 23	Above 28
2	16-17	21-23	26-28
4	15-16.9	19-20.9	24-25.9

*Allow 10% more feed for pullets housed October through April.

VIII. EGG PRODUCTION BONUS SUGGESTIONS

A. To tie grower payment to net egg sales price—market eggs

Net Sales Price c Dozen	Grower Payment With*	c Dozen Without*
25c or less	2.0	3.0
26-28	2.5	3.5
29-31	3.0	4.0
32-34	3.5	4.5
35-37	4.0	5.0
38-40	5.0	6.0
Over 40	6.0	7.0

*Grower payment for raising pullets approximately 1c doz.

(Turn to page 22)

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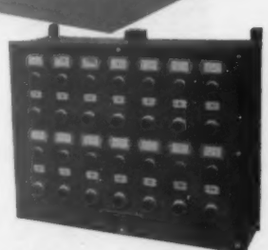

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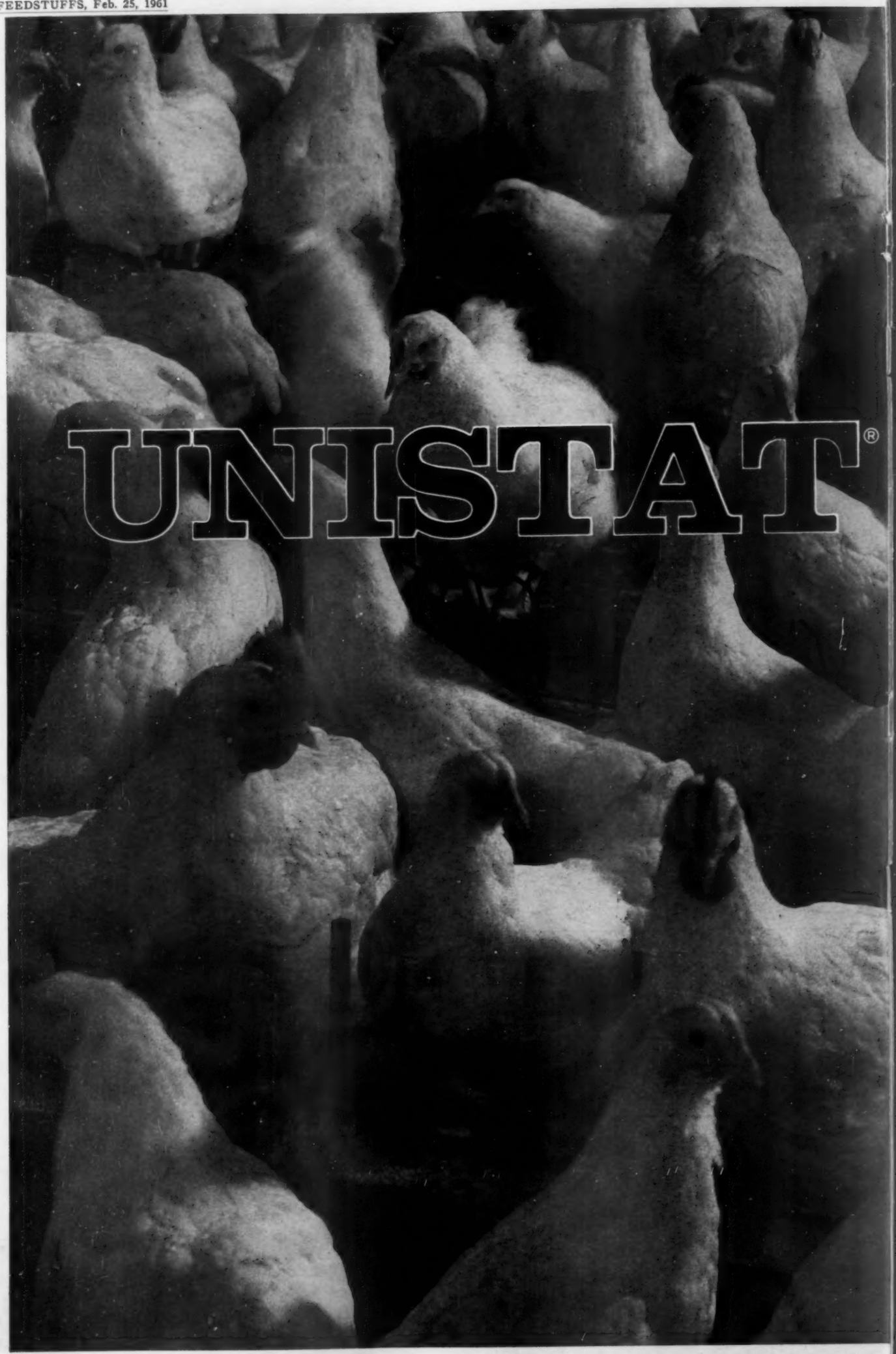
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- **NEED LESS FEED.** Laboratory tests show that Unistat-fed broilers needed *7.3% less feed* per pound of gain.
- **BETTER COLORING.** Shanks of both male and female broilers on Unistat showed *significantly better coloring.*

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Charles City Iowa, U. S. A.

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B. To encourage and reward good husbandry

Eggs* per Pullet Housed	Bonus Case	Cents Doz.
Less than 200	0	0
200-219	10	½
220-239	20	⅔
240 or more	30	1

*Clean eggs delivered to contractor

C. To encourage feed savings

Feed Efficiency (lb. per doz.)

Bonus c per case	Super Feeds	Complete Feeds	Mash & Grain
0	est. 3.5 above 3.81	4.5 4.81	5.81 5.81
15	3.61-3.80	4.61-4.80	5.61-5.80
30	3.41-3.60	4.41-4.60	5.41-5.60
45	3.21-3.40	4.21-4.40	5.21-5.40
60	below 3.20	4.20	5.20

D. To encourage production of high market quality. Could be dry cleaned (nest clean) breaking stock

Bonus	Condition
30c per case	90% or more U.S. Grade A Quality

IX. RECAP OF CONTRACT PRODUCTION COSTS BASED UPON EXPECTED GOALS

ITEM	Expected	Payment ¢/dozen*
Pullet growing	30c	1.5
Net egg price	32-34c average price	3.5
Egg production	220-239 eggs	0.66
Feed efficiency	4.41-4.60 lb.	1.0
Egg quality	90% A	1.0
Expected average payment		7.66c

*Minimum guarantee 3c

X. NECESSARY CONSIDERATIONS IN EGG CONTRACTING

A. Field supervision
B. Minimum unit size—flock, project
C. Planned obsolescence (13-14 months' production)
D. Maximized protection—vaccinations, inoculations
E. Uniform placement—uniform product flow
F. Capital requirements
G. Financial Stability

'60 Was Record Year For Western Farmers Association

SEATTLE, WASH.—The Western Farmers Assn. recorded an all-time high for marketing and purchasing volumes and operating margins in 1960, according to Harry J. Beernink, general manager.

Volume of business for 1960 totaled $71,947,019, compared to $67,555,059 for 1959 and $37,009,511 10 years earlier, Mr. Beernink reported. He said that net operating margins were $4,622,714 compared to $4,243,276 for 1959 and $2,104,414 in 1951.

These patronage returns, he said, represented 8½% or an average of $6.50 per ton of the purchase price of formula feeds, and also 8½% return for all other non-feed farm production supplies purchased through WFA in 1960.

"These savings will be distributed in early March to farm members as extra income received from using WFA's integrated farm-to-market services," Mr. Beernink said.

Total margins include returns of 5% additional payment for seeds marketed, and an extra 30¢ per 100-lb. bag on beans marketed during 1959-60.

All-time-high or near-record volumes of turkeys, eggs, fryers and seeds were marketed by WFA for its members last year, Mr. Beernink said.

Purchasing departments likewise transacted record volumes in supplying feeds, fertilizers and other essential farm production supplies to Northwest farmers, it was reported.

Among other operating highlights for WFA during 1960 as reported by the general manager are:

A modern new "push-button" feed mill was completed and is now in production at Portland, Ore.

Egg division operations were modernized at Seattle and Pasco, and new-type automatic egg grading and packaging equipment was installed at Spokane.

Land was purchased and construction is nearing completion for WFA research plants at Sunnyside and Puyallup, Wash. The eastern Washington plant will major in nutritional and feeding research for beef cattle, swine and turkeys; while work at the western Washington plant deals primarily with layer and fryer chickens and turkeys.

Altogether, these new additions and improvements in WFA facilities in Washington and Oregon involve over $2 million capital expenditure, Mr. Beernink reported.

The Quincy Farmers Elevator Cooperative, Inc., with facilities at Quincy and Trinidad, Wash., merged with WFA last year.

In looking to the years ahead, Mr. Beernink predicted "a continuing trend toward stronger farmer cooperatives, brought about through broader, integrated services and by merger and unification.

"The trend toward integrating production and marketing services will continue under pressure to 'shorten the gap' between producer and consumer so farmers can share in more of the margins in producing and marketing products from their farms," the general manager concluded.

Reinforcements should be here tomorrow, Harvey. Can we hold out?

Sorry boys, but war is war and you're the next to go. When that new load of Kent comes tomorrow, you'll be gone. That's why Kent dealers make more money . . . they move more feed.

KENT FEEDS
THE FEED WITHOUT A FILLER
Muscatine, Iowa Sioux City, Iowa

when you raise a thousand pigs on rations containing Borden's Fermacto 400

For each one-thousand pigs raised on rations containing Fermacto 400—swine growers can save **up to one car of feed.** Now, after years of Borden's Research and testing, comes this significant reduction in feed consumption that can help increase your hog feed tonnage by lowering production cost.

Pigs fed rations containing Fermacto 400 – Borden's concentrated and standardized source of multiple fermentation factors —gained faster on less feed than those on the control diet—in fact, **20** pounds less feed for each hundred pounds gain.

The low level of Fermacto 400—0.25% (5 pounds per ton of feed) supplied the extra factors—making this improved efficiency possible.

Call today for Fermacto 400 price quotations, brochure and test data, as well as information about our complete pig and swine-feed fortification products, **KREPRO & HOPRO.** These quality products can help you build a complete line of quality feeds for all phases of swine feeding.

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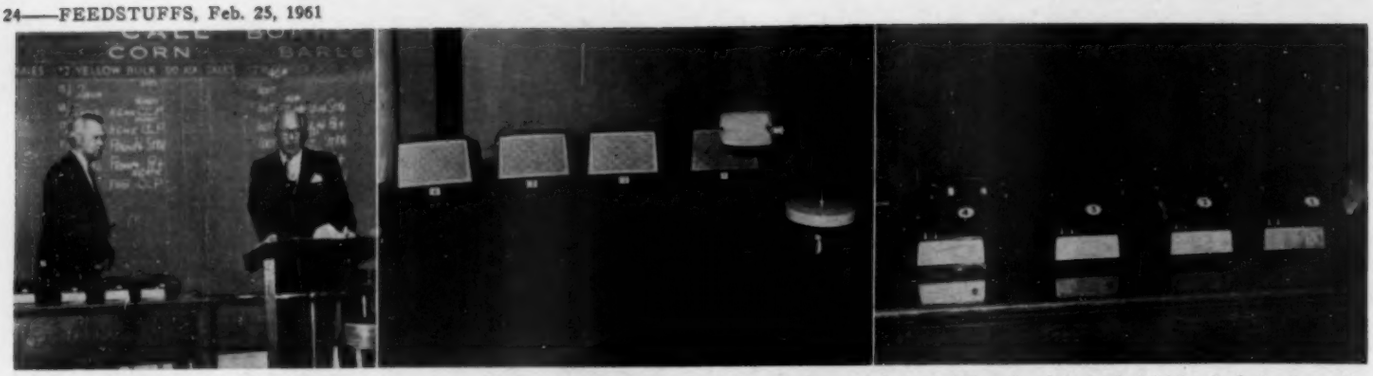


TELEPHONIC GRAIN EXCHANGE—The San Francisco Grain Exchange recently launched the first telephonic cash call board in the country. First photo shows E. A. Silverman, right, president of the San Francisco Grain Exchange, and E. W. Huebner, exchange manager, explaining how the new telephone trading system works. Center photo pictures the speakers which relay calls from traders at different points, and right-hand photo shows the microphones and volume controls. The microphone is used when a trader's call has to be routed through various exchanges and comes in weak; it amplifies the call through a wall speaker.

Telephonic Grain Trading Launched in California

SAN FRANCISCO—The San Francisco Grain Exchange has successfully launched the first telephonic cash call board in the country. The new system permits traders to participate in call board sessions from their desks in remote sections of the state by telephone.

When in full operation, the telephonic grain exchange will work like this: The trader will dial a special, unlisted number, which will connect him by his telephone with a loudspeaker and receiver in the Grain Exchange in San Francisco. He will be able to hear everything that takes place on the trading floor, and his bids will be heard by everyone at the exchange. The Grain Exchange provides pads with a replica of the call board so that the members trading by phone can tabulate calls.

Fifteen carloads of grain were sold in the first six days of the trial run of the new system. At the official opening of the system Jan. 17, every sale involved a member who was present only by telephone, and the remote members participated in every call. About a third of the calls were initiated by the telephone traders.

Only one problem developed when a distant telephone trader, misunderstanding the business on the floor, quoted a milo price on a corn call. However, E. W. Huebner, Grain Exchange manager, who conducts the call board sessions, noted the 40¢ discrepancy and pointed out the trader's mistake which prevented a heavy loss.

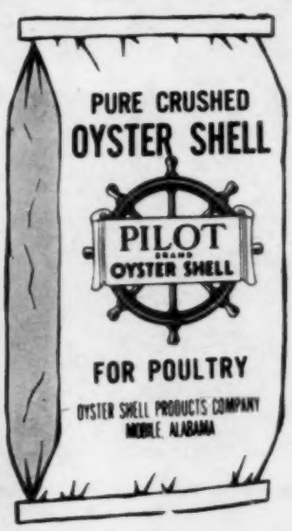
Mr. Huebner said the telephonic call board was developed at the suggestion of several Grain Exchange members, notably Lester Serring, manager of the feed department, Nulaid Farmers Assn., who wanted a way to participate in the call board transactions although Nulaid has moved its plants away from the San Francisco district.

Details of the system were worked out with the Pacific Telephone & Telegraph Co., which installed the equipment. A delay in the arrival of equipment from the East forced postponement of the official inauguration of the system from Dec. 12 to Jan. 17.

FORMER MILL OWNER DIES

KANSAS CITY—James R. Blacker, former owner of the Blacker Milling & Grain Co., Kansas City, died in a Kansas City hospital recently. He was 67.

EVERYWHERE YOU GO



POULTRYMEN PICK

PILOT BRAND OYSTER SHELL

Coast-to-coast PILOT BRAND is a best-seller every month in the year. That's because this ideal eggshell material is tried, tested, proved. It definitely helps poultrymen get top production of stronger shelled eggs—the kind that bring highest prices in the market.

This universal demand for PILOT BRAND means that you can always count on steady sales, fast turnovers, good profits. And we help to keep customers coming your way with consistent advertising in leading farm and poultry publications and on more than 70 radio stations.

It pays BIG to stock, display, promote PILOT BRAND Oyster Shell —the largest selling eggshell material in the world.

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More Profit With Less Effort — thru an

"A complete feed plant operated without gearing through the use of hydraulics"

"IOWA" Mobile Feed Plant

- Big Husky Iowa Mill
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- 2-3 Ton Mixer Capacity
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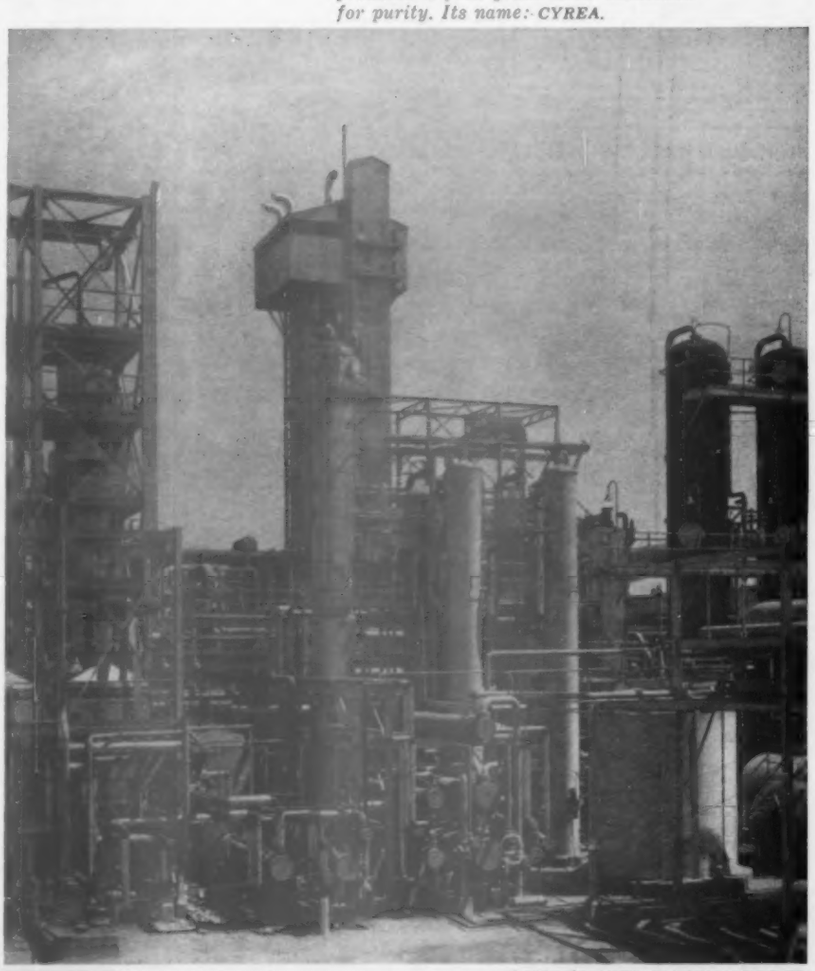
Cyanamid offers (1) a product of highest purity and quality (2) stocked in conveniently-located warehouses (3) readily available for fast delivery.

In its new, ultramodern plant, Cyanamid produces a feed grade urea unexcelled for purity. Its name: CYREA.



In producing CYREA*, Cyanamid uses special quality-control checks at every stage of production and runs an analysis on every batch before bagging. You are assured of a feed grade urea that is guaranteed 42% nitrogen bag after bag.

Low biuret

The biuret content of CYREA is extremely low. That means rumen bacteria are provided with maximum amounts of available nitrogen.

Controlled, micro-prilled particle size

CYREA comes in the form of small, rounded beads. These prills are subjected to several screenings to assure a uniform and perfect particle size for your feeds. Micro-prilling also means CYREA will be evenly distributed in the feed.

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CYREA flows freely when it's made—and when you use it. That's because each prill is coated. They won't cake or bridge. CYREA is available to you in 80-lb. moisture-resistant, polyethylene-lined multi-wall bags.

When you order urea feed grade, specify CYREA. American Cyanamid Company, Agricultural Division, New York 20, N. Y.

**CYREA is American Cyanamid Company's trademark for its urea feed compound.*

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From . . .
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Use Feedstuffs WANT ADS for RESULTS

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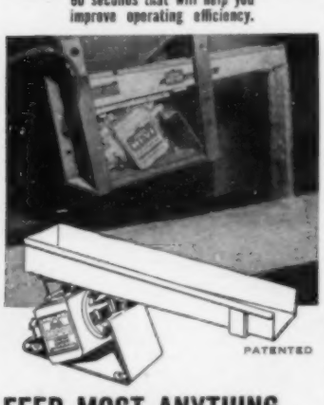
60 seconds that will help you improve operating efficiency.



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19 NEW PRODUCTS IN THE LAST 5 YEARS

Independent Poultrymen Urged to Merge Because . . .

Feed Men Will Be Selling Food

KANSAS CITY — The prediction that "feed manufacturers will be selling their product as food—branded food—on a national scale" within 3-5 years was made here Feb. 10 at the opening session of the Institute of American Poultry Industries' 32nd Fact Finding Conference.

William A. Haffert, Jr., editorial director, Garden State Publishing Co., Sea Isle City, N.J., says this means independent operations in the egg, turkey and broiler industries "will have to combine forces" as a way to counter buying power with selling power. He said the feed industry will wind up with most of the animal end product business unless independent operators—poultry and egg producers and those who assemble and market their products—"merge before you have to."

The security of the independent operator lies in collective action, he said. "For want of a better name, select your own title—integration, merger, cooperative action, sales federation. Call it what you will, so long as your collective action fills some, or all of these needs: (1) Increases capital, (2) affords research, (3) gains buying power, (4) upgrades management, (5) gains marketing strength and (6) operates at less unit cost."

Mr. Haffert said the independent segments of the poultry industry "must and can find a way to counter massive retail buying power with massive selling power," but he injected these questions: "How will it be done? When will it be done? And by whom will it be done?

"Your future course of competitive conduct as independent businessmen will be influenced not only by what you do, but by what government does, by what the giant feed and food processors do, by what the retailers do and by what the cooperatives do." (See Mr. Haffert's related predictions below.)

"Chief Competitor"

Mr. Haffert said the large feed manufacturer "probably will become the chief competitor" of the independent poultryman. "Yesterday's feed dealer is becoming today's grower . . . a food manufacturer," he said.

Mr. Haffert directed his remarks at the independent, whom he defined as "the local person or firm which injects most of the capital, takes most of the risks and is responsible for making and executing policy.

"In our industry, I think you would classify the 'motivator' today as not usually the man in the chicken house, but the person who sells to him, buys from him or, by various subtle or directed contractual relationships, essentially assumes for the farmer most of the decisions on price and volume and quality control. The 'independent,' in the sense I have defined it, would include the cooperatives, even though they also represent business."

Plan of Survival

"The long-range picture shows that our broilers, eggs and turkeys continually are buying less pounds of feed per market dollar. We've got to 'marry' other segments to survive, or bring supply and demand under our control," Mr. Haffert remarked.

"I believe the first to move into mergers will be the independents—the integrators—alone or as partners of national feed manufacturers. Next, the processors, then the co-ops and, eventually perhaps, some of the chains. However, I still believe the major feed manufacturers will be the first to seek brand name identification on a massive scale.

"Tomorrow's 'independent' operator has his counterpart today in our industry. He will be well-heeled, astute, federated, probably publicly-owned. I think he's on the threshold of the biggest profit potential in history.

"Mergers and acquisitions are a natural procedure whenever they offer the primary elements of increased sales power, profit protection and financial stability. They have some added personal benefits as tax shelters, protection against estate litigation, etc. Most of all, they represent power—and power is what we, as independents, must have in order to face up to retail buying power."

"In the Money Business"

"The most important point I can make is this: We're in the money business. We haven't been hurting too badly to the present—especially this year. But let's start taking the offensive. Let's put our money to work as the big fellows do.

"There has been a major feed manufacturer trend to acquisition of at least controlling interest in hatcheries and processing plants, at all but the feeder level, in the so-called 'dealer' complex," Mr. Haffert commented. "I believe this is but another step toward total integration in the sense that the larger feed manufacturer must assume the obligation for merchandising end products. The intermediate step, of course, will be to work at the wholesale merchandising level.

"National Broiler Council, fully aware of this, has formed a task force for this purpose. Feed manufacturers, if only because of enlightened self-interest, should support this NBC effort 100%.

"The final step, I predict, will be triggered by at least one national feed firm within the next three to five years—a direct approach to the consumer with a merchandised label in the poultry field.

"Some major feed firms that do not now have a consumer brand are preparing to acquire one by merger or purchase—or, in turn, are ready to be married to a firm already possessing a consumer franchise, probably a meat packer or other food processor."

Survey Cited

Before saying more about the predicted brand merchandising trend, Mr. Haffert discussed the results of a 1961 outlook survey conducted and published by Feedstuffs.

"In a December survey responded to by 145 feed manufacturers of all sizes, Feedstuffs concluded that 25% were either processing or planning to get into processing; more than a third were either operating feeder enterprises or planning to; some 25% were operating hatcheries or expecting to," he said. "Significantly, more than one third were involved in, or planning to get involved in 'end product merchandising.'

"I think it can be safely assumed, from this survey, that even smaller feed manufacturers at least are becoming consumer-oriented. They are beginning to identify themselves, for the first time, with the food business as well as the feed business. Although competition is very keen in the feed business, it is the 13th largest in the country. It will expand an estimated 40-50% in the next 10 years. They can't afford to desert this field, even

. . . . . .

SEVEN PREDICTIONS *for the Poultry Industry*

If the future conforms to the blueprint drawn by William A. Haffert, Jr., in his talk, "Merge—or Submerge?" at the Fact Finding Conference of the American Poultry Industries, here's what will—or won't—happen in the poultry industry:

"1. We'll have more government before we have less in the poultry industry, indeed in all of agriculture. We are engaged in a social as well as an economic revolution in farming, and I don't think 'free enterprisers' can satisfy the social need fast enough to prevent government action in the economic field. This need not be disastrous. It can be beneficial.

"2. We anticipate a tremendous revitalization among cooperatives. Cooperatives are beginning to find a way to act more like corporations. Where they enjoy a tax-favored status, it is likely that this privilege will be at least partially protected, because it helps serve the administration's social aims for agriculture. It gives the 'little fellow' a collective bargaining position, without, for example, resorting to grower-level unionism.

"3. I do not foresee, in the near future, any pronounced move toward vertical integration among large food processors — either back to the farm or into retail store ownership. Brand-wise, however, the food processor will tremendously accelerate his efforts to win consumer favor.

"4. I do not think that the retailer will move back into the poultry industry—not for a long, long time.

"5. I look for extreme competition to develop between national feed manufacturers and independent integrators in the egg, turkey and broiler industries—especially those feed companies who can control sources of supply for ingredients going into concentrates. If they can also acquire, or already possess, a consumer-recognized trademark, they will take most of your business. They will do it through horizontal and vertical integration unless 'independents' federate, amalgamate, merge or otherwise move into economic concentration of production and sales power.

"6. A wonderful future lies ahead for the 'little fellows'—those who can pick up narrow segments of the market generally considered unprofitable by larger operators; those who can do a more intensive, personal job in local markets and who are businesslike in their internal as well as external affairs.

"7. Look for a lot more integration before we have less. (Some day we'll have less, but not for quite awhile). As to timing, I think we can say that within three to five years, you will see this trend accelerate tremendously. And you won't have much choice as to whether or not you want to 'go along.'

"Once most people move in a certain direction in American business, history seems to indicate that all must do it. The 'holdouts' haven't the resources to survive while they prove that they might have been right after all. Nor can they easily defend the premise that they were right, for that particular time and set of circumstances."

if they have to sell it in the form of eggs or broilers."

However, according to Mr. Haffert, the unaffiliated smaller feed manufacturer probably will confine his end product merchandising effort to strictly local areas or specialty markets. "He may prefer, because of the cost involved, to work with others on their brands rather than try to identify his trademark with the consumer," Mr. Haffert said.

"With the very large manufacturer, however, I foresee a classical 'battle of the brands' at consumer level. In the final analysis, this will be the only major tool at his command that the unfederated local firm will not have the resources to acquire.

"Simply because the facts happen to be publicly available, let's take a look at the largest feed manufacturer of all, Ralston Purina Co. In 1956, this firm had total assets of $102 million. In 1960, these assets had increased to $143 million—a staggering 10% a year increase. Ralston earned 12.6% return on its assets in 1960. It has earned as high as 14%, and I think it will again.

"Quaker Oats expanded its assets from $90 million in 1956 to $110 million in 1960. Quaker has averaged more than 12% return on net assets —after taxes, of course—each of these five years.

"In 1960, as a matter of fact, Quaker and Purina were only 0.3 of a point apart on an assets-to-earnings ratio. Purina apparently operates on a higher volume, lower profit margin, than Quaker.

"The significant point here—and I think it applies to any of the successful larger mills—is that profit after taxes compares very favorably with the chain store industry, and is slightly above the average returns for the food processing industry.

"Thus, any move back to the farm, or into retailing, would have to come, as I see it, from a defensive rather than offensive position. It is obvious why these mills are resisting a highly expensive direct brand merchandising effort."

Current speculation is strong, however, as to whether or not the major feed manufacturers must move back into ownership of farm production facilities, Mr. Haffert observed. "There is economic sense in avoiding direct ownership of chicken coops," he said. "It takes an estimated $1 of investment—fixed and operating—for every $4 in sales to produce and process broilers in eviscerated, whole form. For eggs, it would be higher. It takes the retail chain operators only about $1 of investment for every $15 in sales.

"Picture Changing Rapidly"

"From the feed mill forward, the picture is changing rapidly. Within this year, I am sure you will see some surprising combinations emerge in the broiler, turkey and egg fields —particularly broilers. The feed manufacturer will become the 'grower' in the sense of carrying product through first processing. Others may temporarily take the product from that point forward.

"Let's call this second stage the 'food processor.' As we have seen earlier, the 'second processor' probably will control brand—at least the larger ones will.

"Now we ask ourselves: Will the feed manufacturer, in time, move beyond this 'first processing' stage? Will he become a further processor and a food merchandiser?

"I say 'yes'—not overnight, but eventually. It may be through contract at first, then merger, or by direct vertical route from farm to market. This is purely deductive reasoning, because most of the feed manufacturers I've talked with don't think they will, or at least say they won't.

"Three major considerations cause him to hesitate:

"1. Can he justify the added cost of consumer merchandising? Can he make it return added profits, or guarantee him an advantage in holding captive, and expanding, his feed volume?

"2. Can he do this without alienating the chain store buyer and, at present, even more importantly, his dealer-partner?

"3. Can he find more profitable uses for his money than by directly

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Build for the future with Ful-O-Pep's 5-point bulk and grind-mixing program: 1. Unsurpassed experience and know-how in bulk, grind-mixing. 2. Experienced engineering help. 3. Help in arranging financing. 4. Backing of trained sales and service men. 5. Complete line of research-built farm-proved concentrates.

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The Gerber Roto Flo Distributor
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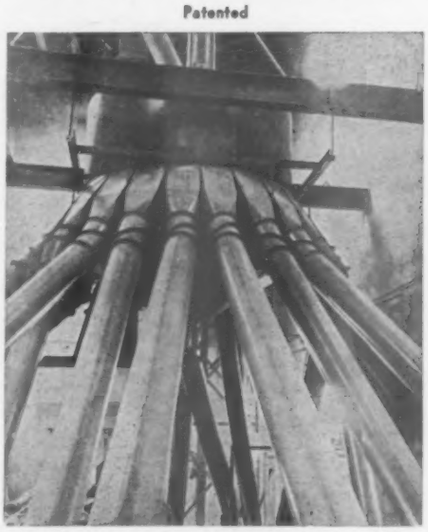

This illustration shows a typical Roto Flo installation using reversible elbows and Gerber's high quality bin spouting.

GERBER'S IMPROVED BROWN-DUVEL MOISTURE TESTER

The GERBER BROWN-DUVEL is manufactured in the following sizes: One, two, three, four, five and six units.

Now you can own a B.D. moisture tester with automatic shut-off built in the unit—compact and modern. Compare these features:

- Stainless steel construction.
- Safe, low voltage shut off.
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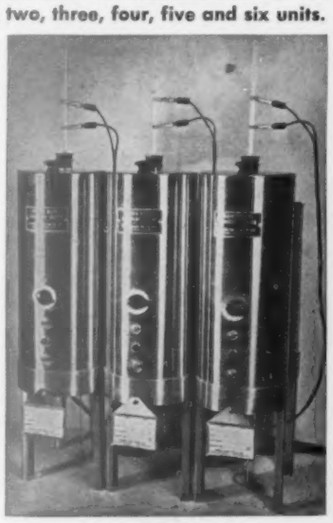
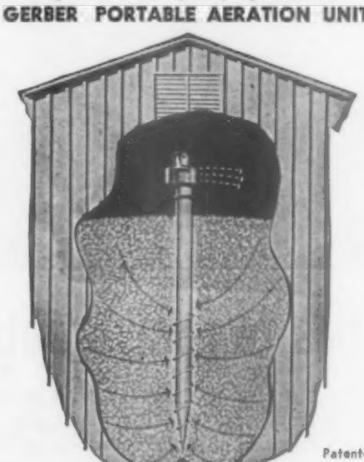
- All replacement parts and glassware in stock for prompt shipment.



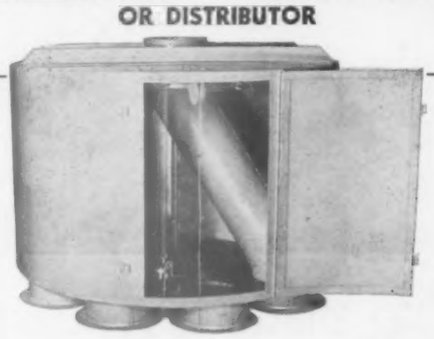
Keep Your Grain Quality Up With the GERBER PORTABLE AERATION UNIT



Patented

Yes—the Gerber Portable Aeration Unit can be the best purchase you have ever made. Low in cost—high in efficiency—easily moved to the point of trouble—and adequate for the job—this carefully designed and adequately tested unit has proven its worth in hundreds of installations. A practical and down to earth approach to the problems of grain storage—and one which works.

GERBER'S ROUND REVOLVING VALVE OR DISTRIBUTOR



. . . for better, more efficient distribution of materials in your mill

Designed with round inlets and outlets to eliminate special square to round fittings. Requires less height than the standard valve. Offers positive control with no danger of a leaking valve. Can be used as a distributor on a single leg installation. Gerber adjustable elbows recommended for top efficiency and convenience.

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OUTDOOR PROMOTION—Beginning in March, Easter eggs will be featured with Morton salt on outdoor billboards. Morton Salt Co. officials feel that use of billboards and grocery store promotional pieces that tie in with eggs helps promote the sale of eggs as well as the sale of table salt.

investing in all of the processes from farm to market?"

Mr. Haffert noted that a Purina vice president, Jack Streetman, has answered two of these questions in this way: In eggs, yes, they have demonstrated they can create consumer preference through advertising. But you have to have quality and quantity. Previous efforts have failed in local areas because of this lack.

Could a firm of his size do this job at a profit? "Not yet," Mr. Streetman says. Feed manufacturers, to date, have had to subsidize retailing efforts from manufacturer's profits. Many of them, Mr. Streetman says, have lost money trying.

Mr. Streetman also observes that the nature of business aparently dictates that you must buy your eggs as low as possible and sell them as high as possible.

"This isn't always palatable to what Mr. Streetman identifies as Purina's prime customer, the producer," Mr. Haffert commented. "So, he concludes, Purina gives no more than token local aid to its dealers in end product merchandising.

"I think that Mr. Streetman's observations generally reflect manufacturer opinion about two of the three questions we have raised. It doesn't appear, at this point, profitable to merchandise. And you certainly won't be very popular if you sell to your dealer, then sell against him in the same corner store.

Assumptions Challenged

"However, for the future, at least, I'd like to challenge these assumptions.

"Brand loyalty can be established. Mr. Streetman acknowledges this.

"We know that—unlike dog food—meat, milk, bread and chicken are loyalty items jealously guarded by the retail stores. The stores know that these items are perishable, and that there is an opportunity to build allegiance for them—real or fancied—under store labels. All of this helps build traffic.

"Can a food processor — or feed manufacturer turned processor — jump right into the kitchen and presell the housewife on a particular brand of eggs, turkey, broilers or bacon? I think the answer must be this: Yes, on a very small local scale or, yes, on a massive scale.

"From the major mills' viewpoint, I think we have to look upon such a 'national' effort as one that would reach your television screen, for example, by means of a network show. They will have to keep the entire corporate image of their national firm in mind.

"Will branded broilers or eggs help sell branded cereals and cake mixes and dog food and vice-versa? So the answer comes down to one of size. Is the promoter big enough—horizontally strong enough, as well as vertically—to move in this direction?

"I think that it is but a question of time before the big firms must move in this direction."

Talking about whether or not it would be profitable for a feed manufacturer to turn food processor-merchandiser, Mr. Haffert said, "We have seen that the feed manufacturer averages about 12% return on his assets, and that the food processor earns pretty close to that, too. I don't see where the feed manufacturer has much to lose from trying. And the ultimate goal might be a captive retail chain, with its 14% profits. Some of this, mind you, might come from merger rather than creation."

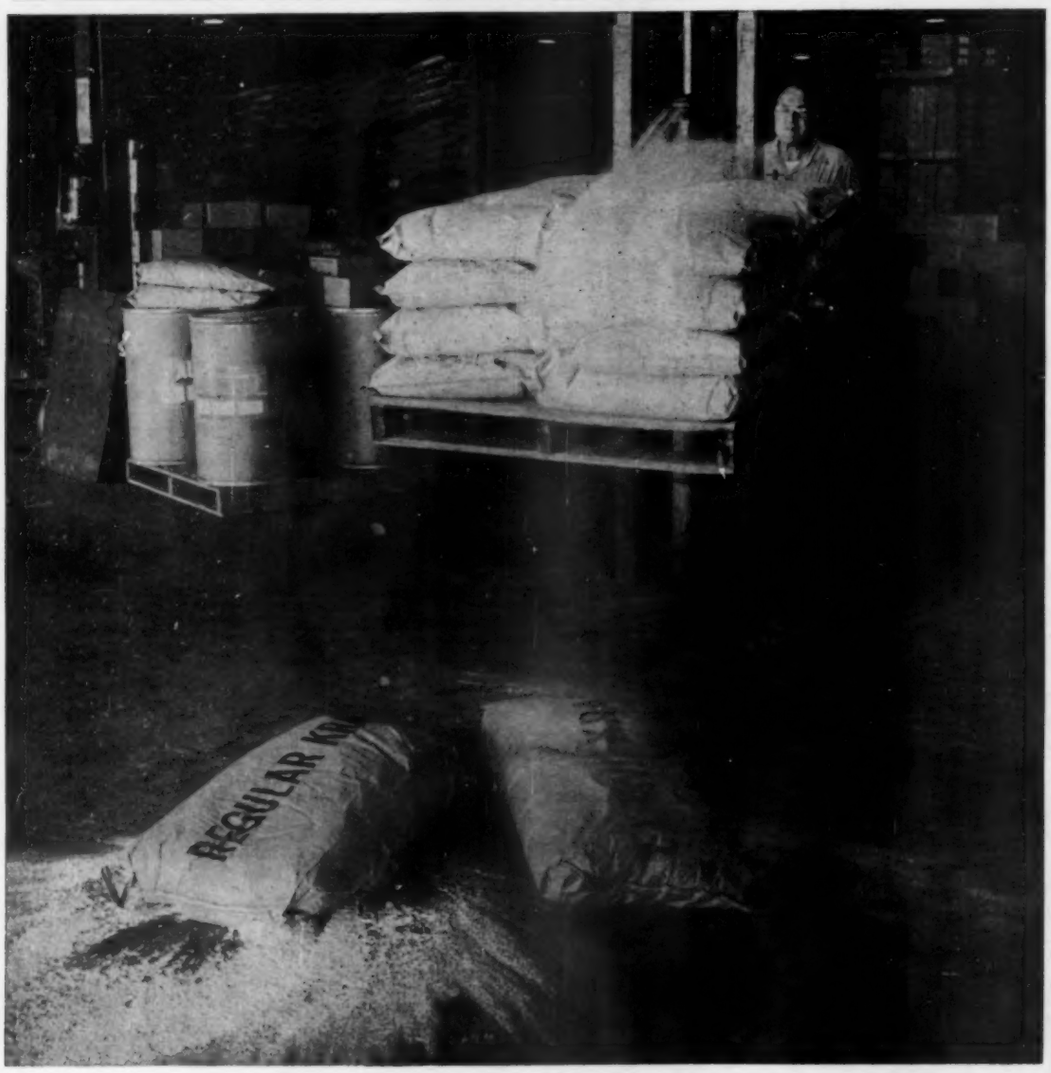
Brand Merchandising

In his comments about the independent operator, Mr. Haffert said brand merchandising is "the most profitable ultimate means" of selling. "It will take vast amounts of capital, know-how and desire if you want to establish consumer loyalty for your brand," he said, "but it can just as readily be the wholly independent businessman as it can be an independent acting through a large cooperative or a large feed processor."

Merging independents should know, he said, that they will need public sources of financing as time goes on, particularly for long-range objectives and "for that awesome job of consumer promotion.

"Keep a goal like this in mind: Something like at least 25% gross margin on your total operation, with at least 10% net income after taxes. Put yourself in the investment broker's shoes: Realize that you cannot completely control cost of raw product, nor of finished product. Realize that you must reflect sophisticated and dedicated management. You must show a reasonable degree of diversification to overcome erratic earnings

(Turn to MERGER, page 87)



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The *unbroken* bag is made of H&W's new high-strength Expanda-Kraft.

As the lift truck braked to a sudden stop, both bags flew through the air and fell hard against the concrete floor. The regular kraft bag split open — note the spilled flour. Yet, look closely at Expanda-Kraft. *Not a sign of breakage*! Naturally, both bags were identical in basis weight and number of plies.

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Expanda-Kraft comes in 40, 50, 60, 70, 80 and 100-pound basis weights. *For samples and information*, write Hollingsworth & Whitney, Division of Scott Paper Company, Chester, Pennsylvania.

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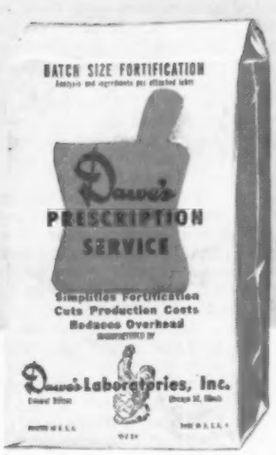

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DOUBLE BUSINESS—Here are two of the three mobile mills that have helped Squires' Produce Co., Arlington, Iowa, to double its business since 1955. The firm keeps two in constant use, and the third, purchased for emergency use, has been leased out.

Iowa Firm Reports Doubled Business with Mobile Service

By Al P. Nelson
Feedstuffs Special Writer

It takes a lot of grinding and mixing to warrant owning three mobile mills, but that's the number that Don Squires, owner of Squires' Produce Co., Arlington, Iowa, owns. His feed business has doubled since he bought mobiles and put them into operation, he reports.

He acquired his first mobile mill in 1955, his second in May, 1958, and his third in July, 1959. Actually, one of the units was purchased as a standby unit to help out on busy days, or in case of a breakdown. However, in the last year it was leased to a feed man in a nearby area who offered a good lease price, so Mr. Squires is now getting along with two Daffin mobiles.

How does he do it?

On busy days when the schedules are heavy, he puts on a second man to help a mobile operator. By the number of batches lined up for a day, Mr. Squires knows just how many hours the mobile will be working. He states that after a 10 hour day, a single operator will be pretty tired. But by putting a second man on, the two are able to work 15 hours per day and thus get through the busy schedule.

"Luckily we have a warehouse and truck staff where we can exchange help for a day or so," Mr. Squires states.

Mr. Squires says that one man on a mobile can handle about 20 batches per day. He trains every operator to operate the mobile, manage the on-the-farm grind and mix operation, and how to please customers.

"A good man makes this mobile business," he states, "and a poorly trained man can break it."

The firm gets $4.50 per batch for ½ in. screen grinding and $5.50 for under ½ in. Multiple batches are 50¢ less after the first batch.

The operator receives a commission of 50¢ per batch ground, plus 25¢ cwt. on molasses. Two of the mobiles have corn shellers and the charge for shelling is 4¢ bu.

"Our first unit (1955) now has 66,000 miles on it," Mr. Squires reports. "We operate our mobiles on a six day week grind and mix basis. Our staff does the service work on the mobile mill and a local garage handles the truck maintenance."

Mr. Squires operates his mobiles within a radius of 10 miles of his main plant. There are many small and medium sized farm operations in the area, with some chicken, hog and beef raisers. The average grind for each customer is about two batches, he states.

"I've got some larger hog and cattle feeders who want service twice a week," says Mr. Squires. "They pay on a monthly basis, and also buy a lot of feed from us."

This feed man also sells chicks, buys eggs and poultry and thus contacts farmers quite often. In addition, he has a regular salesman. This man handles route selling (Purina) and deliveries, picks up eggs and also sells mobile service.

"In fact, the various parts of my business tie in very well together," says Mr. Squires. "Because of our many contacts with farmers through egg and poultry buying, we can spot the new farmers who might want feed and mobile mill service, and get to them quickly. Route selling, too, really picks up a lot of feed orders."

The firm's salesman also handles the pig weighing service. He goes out about twice a month to weigh pigs for customers, and they appreciate the service. It is also a fine method for selling more feeds, states Mr. Squires, for the salesman can show the farmer exactly what his livestock is gaining on Purina feeds.

Services like this, contends Mr. Squires, help to offset, to some extent, bulk feed and grain bank competition in the region.

Mr. Squires keeps customers fully aware of his services through weekly ads in church papers and also in a newspaper at nearby Elgin, Iowa.

BUSINESS — Constant contact with farmers breeds business for Squires' Produce Co., Arlington, Iowa. Not only does the firm operate mobile units, but it also sells chicks, feeds and farm equipment, and buys eggs and produce. Photo shows Don Squires, right, owner, selling a hog waterer to a customer.

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A Practical Quality Control Program

● Raw Ingredients ● Manufacturing ● Finished Product

By Allen W. Wietlake
Hales & Hunter Co.

EDITOR'S NOTE: This article includes suggestions on setting up and carrying out a quality control program, particularly as applied by smaller mills. The author is manager of quality control for Hales & Hunter Co., Chicago. The article is from a talk by Mr. Wietlake at the Southeastern Feed Production School, held at the University of Georgia under the sponsorship of the Southeastern Poultry & Egg Assn. and Feed Production School, Inc.

The feed industry has played a key role in the progress of improving field performance and lowering the production costs per unit of meat, milk and eggs. Today, as never before, the squeeze is on to still further lower the production costs. New and better feed formulas are being developed every day that will bring continued improvement in field performance and lower costs. Quality control's job is to see that these feed formulas are correctly manufactured with the right quality of ingredients so that they can do the job for which they were designed.

A practical quality control program must be established to accomplish these desired objectives. For ease of discussion, this program will be divided into three parts or phases.

QUALITY CONTROL IN RAW INGREDIENTS—This is where quality control must begin, and special emphasis should be placed on this area.

A set of purchasing specifications and buying guides for ingredients is the first prerequisite for a quality control program. These specifications should be established on what is necessary and desirable from nutritional and formulation standpoints. They will then have to be tempered by what is acceptable and agreeable with the suppliers. The economic considerations will also have to be evaluated in terms of what the specifications will cost and what they will mean to the performance of the feed. After some negotiating, a set of specifications can be resolved for each ingredient.

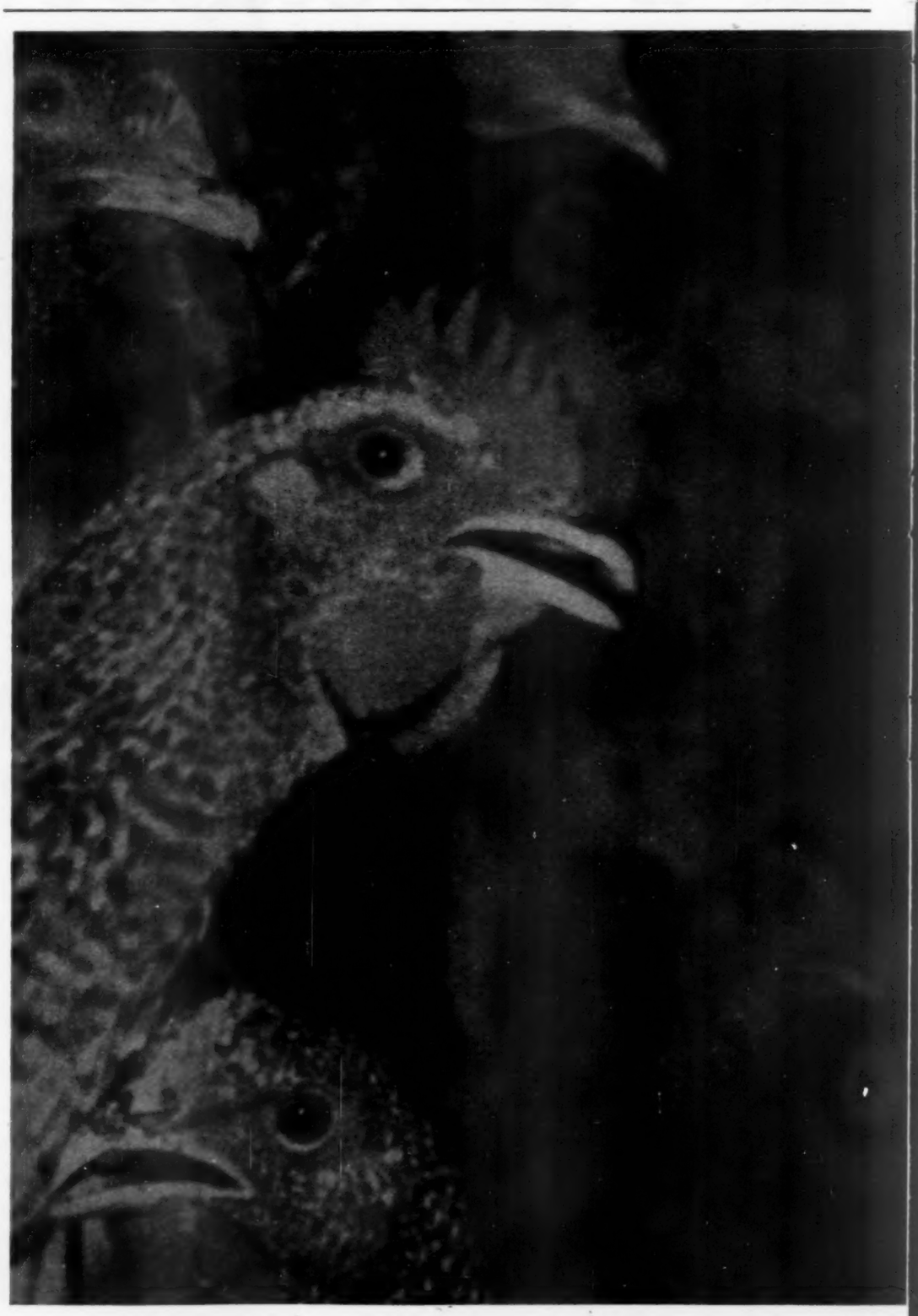
The Buying Guides of the American Feed Manufacturers Assn. are a good place to begin. In many cases you will find that you will not be able to get your suppliers to agree to any additional specifications other than those included in these guides. In other cases the specifications may just be the ingredient guarantees. The specifications, which you cannot get your suppliers to accept, should still be used to guide your purchasing. The suppliers who can meet them should be favored. Continued effort should be made to have all your specifications accepted.

Once the purchasing specifications have been established and accepted by the suppliers, they should be included as a part of every purchasing contract. Many buyers are still not including any specifications as a basis for their purchases. Today we can no longer afford to just buy so many tons or bushels of an ingredient. Instead, we must be very specific about grade, type and quality. Specifications will not replace the importance of dealing with a reliable supplier, and this point cannot be stressed enough.

The job of quality control is not to establish purchasing specifications, but once they are established it is quality control's job to see that all incoming ingredients meet these specifications and are of the desirable quality. All incoming shipments should be inspected and checked for uniformity, color, odor, texture and temperature. Composite samples which are representative of each shipment should be obtained. Chemical analysis should then be performed on each ingredient as required.

Obviously assaying every shipment of every ingredient for all those factors covered by specifications would be a prohibitive expense. Enough shipments of every supplier should be analyzed to establish a history of performance for each supplier. A routine program should then be established, depending on the ingredient and the past record of the supplier, to assure that all the ingredient specifications are being met. Visual inspections will also be of help in deciding when to analyze a shipment.

Since chemical analyses are neces-



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sary to audit the quality of the inbound ingredients, the necessity of having one's own chemical laboratory is raised. Some feed manufacturers have a laboratory located at each of their plants. Others utilize one centrally located laboratory, and some manufacturers have no laboratory facilities. A quality control program can be operated effectively under any of these systems, and the one which is selected should be the one which is the most economical and practical for your operation.

It is generally not practical to hold a shipment and accept or reject it on the basis of its chemical analysis. As a result, the value of the chemical analyses is usually to audit the suppliers to insure that the ingredient specifications are being met.

Manufacturers who have no laboratory of their own can perform this audit by using any number of good independent laboratories. An outside lab which is acceptable to both you and the supplier should be selected in case claims should arise, and you should also let the supplier know that you are checking his shipments.

One very useful way of detecting sub-standard ingredients is with a microscope. The use of the microscope in examining ingredients has become widespread in the feed industry and is referred to as feed microscopy. One of the advantages in using the microscope is that an immediate examination can be made of the ingredient before it is unloaded.

The microscope is most useful in detecting things which cannot be detected by chemical analysis such as adulterants and contaminants. For example, there have been instances where meat scrap was adulterated with feather meal and limestone. The product was adulterated in such proportions that it uniformly analyzed 50% protein. This adulteration could go undetected if a protein analysis was the only means of evaluation. However, adulteration of this type is easily detected with the use of a microscope.

The technique of using the microscope is relatively simple and can be learned without too much difficulty. A binocular stereo microscope is the major piece of equipment which is needed and can be purchased for approximately $350.

There is an Association of American Feed Microscopists which holds an annual meeting. They also conduct two short courses each year. In addition, they have a Methods Manual for Microscopy available for sale which can be obtained by writing to G. M. Barnhardt, Missouri Department of Agriculture, Jefferson City, Mo.

Another subject which should be discussed is ingredient uniformity. Lack of uniformity between shipments can cause serious formulation problems and makes it impossible to manufacture a uniform feed. An example will make the importance of this apparent. Assume that we have formulated a feed using meat scraps which normally contain 5% phosphorus and are relying quite heavily on this meat scrap to furnish the necessary phosphorus in the finished feed. Assume also that we start buying a part of our supply from another supplier who is adding poultry meal to his meat scrap in varying amounts up to 80%. Instead of his meat scraps uniformly analyzing 5% phosphorus, the analyses vary anywhere from 5% to 2.5%. Obviously our feed will be critically short on phosphorus when we use the shipment that analyzes only 2.5% phosphorus. The seriousness of this is not caused by the fact that the phosphorus was 2.5% since we could have formulated at this level if it was uniform, but rather that it was used on the basis of containing 5% phosphorus.

The supplier would probably be most perplexed if you complained about this since the normal criteria of protein, fat and fiber would probably be in line. This example also helps illustrate the value of specifications. If the supplier would agree to a specification on the phosphorus level, you could be assured of a more uniform product which did not contain varying amounts of poultry meal.

Uniformity will allow more accurate formulation and result in a more uniform feed.

As we leave the subject of ingredients, one parting word should be said about storage. The quality of the ingredients as they go into the feed should be equal to the quality of the ingredients when they were purchased. This will include a first-in first-out inventory program, good housekeeping practices and a fumigation program. There is no point in specifying 100,000 units of vitamin A in alfalfa on your purchase and then storing it until it becomes 60,000 units of vitamin A before using it.

QUALITY CONTROL IN MANUFACTURING—This part of the program deals with the procedures and controls which will insure that the feeds are accurately formulated and manufactured.

The most essential element of insuring quality control in the manufacturing process is to thoroughly train and acquaint all production personnel with the importance of the quality control program and their job in it. It must be emphasized that every employee in the mill is responsible for the quality of the feed. Unless all employees understand their role in quality control and enthusiastically accept it, any quality control program is doomed to failure.

Quality control in manufacturing primarily centers around controls to assure accurate proportioning and thorough mixing. It also extends to controls to avoid contamination of the feed, proper processing and tex-

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MILK PRODUCTION—Jack R. Lulick, physiologist on the Davis campus of the University of California, is pictured here injecting radio-active bicarbonate into a dairy cow during a "repeat performance of the famous experiment that proved that lactating dairy cows synthesize milk constituents from carbon dioxide." The demonstration took place during the 1961 Animal Husbandry Livestock Day at Davis. The radioactive carbon passes from the blood stream into the cow's breath. The mask on the cow conveys the breath to a respiration apparatus. Samples of the breath and the milk are then analyzed for radioactivity with an isotope counter. It is then possible to calculate how much of the various injected substances are used for the synthesis of milk products. The original experiment was performed in 1952 by Professor Max Klieber and his colleagues at Davis.

turizing, accurate bag weights and correct tagging.

To establish controls on proportioning, it is first necessary to establish the capabilities of the feeders or accuracy of the batch scale. This means determining what the natural variability is of the weight that is delivered by a given feeder or batch scale setting. After this is established, the tolerance limits for formulating should be set for the production personnel, and they should understand they will be expected to proportion or weigh out the ingredients called for by formula within the established tolerance limits. Means of auditing this will be discussed later. In some cases this variability may be so large that it prevents the desired accuracy of formulation. This may be especially true on critical ingredients or vitamin premixes, in which case more accurate feeders would be in order for those ingredients.

A periodic routine check should be made on the mixing equipment to insure that it is doing a complete mixing job. This can be done by using a tracer such as 3-Nitro (3-Nitro-4-hydroxyphenylarsonic acid) and analyzing chemically for it. A reliable chemical analysis must be available for the tracer. A standard mixing test should be adopted so a basis for comparison can be made from one test to the next. Mixing tests can also be performed to determine the optimum mixing time necessary and the maximum concentration of premixes which can be added to the mixer and still obtain a thorough mix.

Investigations should be performed on the extent and amount of contamination in the various conveying and handling systems. Again the use of a tracer such as 3-Nitro is an excellent way of testing for contamination. A feed containing the tracer at a specific level can be run through the system being checked. A plain feed without the tracer would then follow, and samples obtained in hundred pound increments as the feed is discharged. A chemical analysis for the tracer would reveal what degree of contamination is present in the system and how many hundred pounds need to be set off between runs to avoid contaminating the next run of feed.

If the feed is being texturized, the quality control program should include a program of checking the pellet hardness and the per cent fines in the pellets and crumbles. This program should also include checks on the moisture content of the dry mash and cooled pellets to assure that the coolers are removing all the moisture that was added in the pelleting process.

Correct tagging and accurate bag weights can also be considered as part of quality control. It is first necessary to determine the natural variability in the ability of the packaging equipment to deliver consecutive weights. This information should then be used to establish tolerance limits.

A good platform scale should be conveniently located by each packer and equipped with an over and under indicator. The allowable tolerance should be marked off on the over and under indicator. A program of weighing a sufficient number of bags should then be used to adjust the packer and keep the bag weights within the established tolerance limits.

Coding of tags can be useful. The production or run number can also be indicated on the tags. These codes are helpful in identifying each lot of feed and preventing feed from being shipped after it has become too old.

QUALITY CONTROL ON FINISHED PRODUCT—One of the first means that comes to mind in measuring quality of a feed is chemical analyses. In formulating feeds, it is usual to calculate the nutrients in each formula to insure that the nutritional requirements and the feed guarantees will be met. A number of these nutrients may be calculated, including protein, fat, fiber, ash, calcium, phosphorus, salt, manganese, vitamin A, vitamin D, other vita-

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mins including choline and vitamin B_{12}, important amino acids, xanthophyll, and energy. It should be recognized that the calculated values on the nutrients in the feed formula will only be as accurate as are the estimates for these nutrients in the ingredients. Chemical analyses on these nutrients in the ingredients insure that the nutritional requirements and feed guarantees are being met.

One means of measuring how close a feed is manufactured according to its formula is through actual chemical analyses and then comparing these actual analyses with the calculated analyses for the formula. This means of evaluation has its limitations since the formula cou'd be correctly manufactured but vary from the calculated analysis because some of the ingredients had different nutrient values from those used to calculate the feed analyses. It would also be possible for a feed to analyze correctly and still not be correctly manufactured. Chemical analyses are most valuable in studying specific problems and insuring that nutritional requirements are being met, but their use is limited as a routine control on how accurately a feed has been manufactured according to formula.

It is possible to evaluate how accurately a formula is being manufactured through statistical quality control methods. Statistical quality control is a tool that employs a group of methods for making the soundest possible use of inspection and test results. These methods allow us to correctly interpret the data and make the right decision the greatest number of times. These methods can be most helpful in placing a quality control program on a sound foundation. For example, these methods can be most useful in setting the tolerance limits which we have discussed. Control charts can be established which will indicate what that process is doing and how well it is staying within the tolerance limits. Statistical quality control methods can also be used to predict what a feed formula will analyze on a given number of times. This information can be helpful in insuring that the nutritional requirements and feed guarantees will be met. This information will also enable closer adherence to these specifications which can effect economies in formulation.

One of the best ways to evaluate how well feed is being manufactured according to its formula is through inventory control records. This method compares the amount of each ingredient actually used against the amounts which should have been used if the feeds were manufactured according to their formulas.

The physical use of each ingredient is obtained by taking periodic actual physical inventories and calculating the amount of each ingredient which has disappeared or been used. The formula usage of each ingredient is obtained by calculating the total amounts of the ingredients listed in the formulas for those feeds produced during a like period. This information in addition to being a valuable quality control tool is also valuable for purchasing and scheduling of inbound ingredients.

FOCUS ON ALFALFA—Alfalfa can be mowed, swathed, windrowed, baled, crimped, crushed, suncured, dehydrated, chopped, wafered, pelleted, supplemented. But whatever happens to it, it still tops the list of favorite livestock feeds. Dr. James H. Meyer, noted University of California livestock nutritionist, checks this handful to see how it measures up to the quality standards he helped set for the industry. Dr. Meyer, chairman of the animal husbandry department on the university's Davis campus, reviewed the many ways of preparing and feeding alfalfa during the annual livestock day at Davis.

Unfortunately this inventory control method also has its limitations because of the difficulty in obtaining accurate physical inventories. In addition to indicating a manufacturing error, the differences between the physical and formula use of an ingredient can be due to an inventory error, ingredient shrink or an accounting error. These records, however, are a valuable control tool, and errors caused by inaccurate inventories will correct themselves over a long enough period of time. Inventory usage records become more valuable when a manufacturer does not have his own laboratory.

In recent years electronic equipment has been developed for batch equipment which allows an actual written record to be printed showing the pounds of each ingredient added to the batch. Mechanical devices have also been developed for this. Obviously, these actual printed records are the best possible means of determining if a feed is being correctly manufactured according to formula and within tolerance limits.

There are several other inventory records which can be useful. One is a simple comparison of the number of pounds of feed which are produced in each production run against the number of pounds packaged or loaded bulk for that run. This routine check can be made for each production run. If the pounds that are mixed do not agree with the amount that is packaged, an immediate investigation should be made to determine the cause for this discrepancy.

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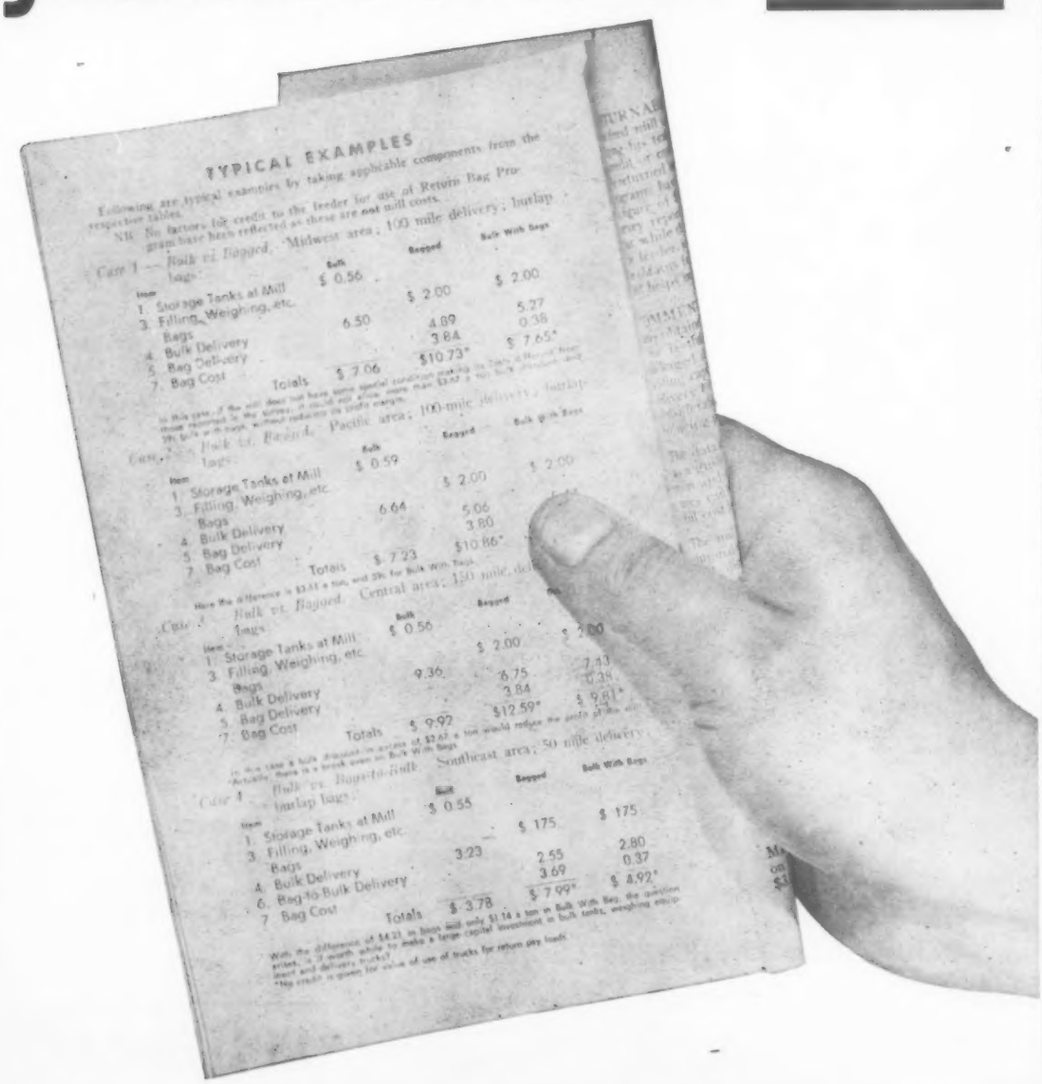
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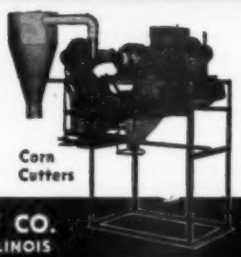

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be discussed is an inventory proof record that can be used in batch mills for recording the amounts of any critical ingredients or premixes which are weighed and manually added to the mixer. This is one of the most valuable inventory records, particularly in view of FDA regulations.

In many batch mills, drugs and vitamin premixes are weighed out manually and added to the mixer. When this method is employed, an inventory proof record can be maintained that lists the amounts of each drug and vitamin premix that were used in each production run. At the start of each production run the weight of the open bag of the ingredient is recorded. The next weight of each bag of ingredient that is used in the run is also recorded and the weight of the open bag remaining at the end of the run is recorded. The amount of the ingredient that was used is then calculated. This is compared with the amount required by formula upon the completion of the production run. This then become a permanent record to show that the correct amounts of these ingredients were used. This type of record is particularly valuable in a drug control program.

"So that's how they can sell a carload for half as much as others can!"

Wayne Howser Joins Winthrop Laboratories

NEW YORK—Wayne Howser has been appointed director of sales of the veterinary department of Winthrop Laboratories, it was announced by Dr. C. E. Fanslau, director.

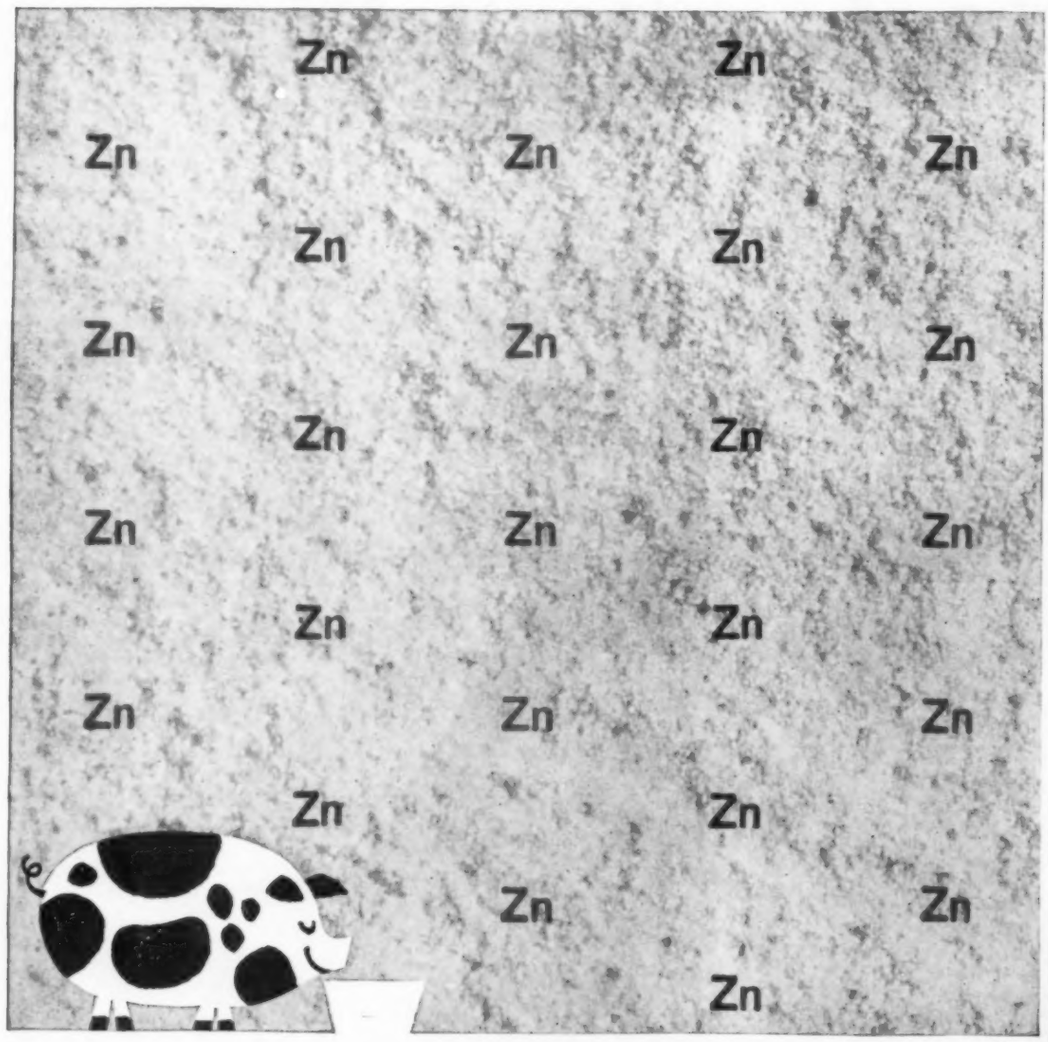
Wayne Howser

Prior to his present appointment, Mr. Howser was assistant products manager, animal health division, Sterwin Chemicals, Inc. He was previously assistant to the sales manager of The d-Con Co., a manufacturer of rodenticides. From 1951 to 1957 he was associated with The Quaker Oats Co.

Mr. Howser received a B.S. degree from the University of Illinois College of Agriculture. He will make his headquarters at Winthrop's main office in New York City.

NEW TURKEY HATCHERY

ROGERS, ARK. — A new turkey hatchery is being opened here by Western Hatcheries of Temple, Texas. Officials said the hatchery will have a capacity of 40,000 eggs weekly, specializing in the Nicholas strains. Both white and bronze poults will be produced.



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PGB-250 This is the trademark of DPi's dry vitamin A for fortifying feeds, pre-mixes, concentrates, and other products fed to poultry and livestock. The material consists of golden orange spherical particles in a size range between 30 and 120 mesh.

DPi has been a primary producer of vitamin A for a long time, was first to synthesize it commercially in this country, produces vitamin A in a modern plant using methods and processes developed in DPi laboratories.

Palmitate This is an inherently more stable form of vitamin A. It resists the effects of heat, moisture, and long storage. Testing vitamin A palmitate and the other commercial ester, vitamin A acetate, in stored feeds and premixes, we typically find 25% or better stability for the palmitate than for the acetate.

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250,000 The vitamin A potency of PGB-250 is 250,000 units per gram. You can also get potencies of 30,000, 20,000, or 10,000 units per gram. The diluent used in these dilutions is solvent-extracted soybean feed of particle size range especially chosen to blend with PGB-250.

You can get **PGB-250** *Dry Vitamin A* in 25-pound and 100-pound drums directly from us or from distributors throughout the country. For further information or a quotation, write ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York and Chicago • Charles Albert Smith Limited, Montreal and Toronto.

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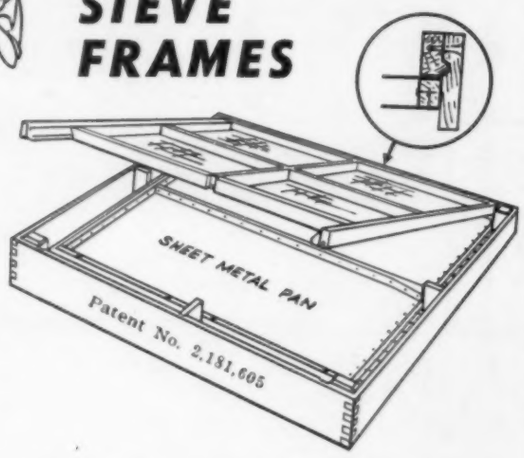

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Study Shows Gossypol Not Only Factor In Egg Color When Cottonseed Meal Used

NEW ORLEANS—Gossypol is not the only culprit in causing the discoloration in eggs produced by hens fed rations containing cottonseed meal. On the contrary, brown or salmon discolorations of the yolk, pink albumin or other defects in quality which may develop in the eggs of hens fed cottonseed meal show little or no correlation with the amount of free or total gossypol contained in the meal, according to a study conducted here.

The study to determine what is in cottonseed meal which causes poor egg quality was undertaken by Vernon L. Frampton, Southern Utilization Research and Development Division, U.S. Department of Agriculture; Biagio Piccolo, National Cottonseed Products Assn. research fellow stationed at the Southern Division, and Burt Heywang, Southwest Poultry Experiment Station, Glendale, Ariz.

According to their published report, correlation between the intensity of color in the yolks from hens fed cottonseed meal and either total gossypol, free gossypol, chemical uncombined gossypol, and gossypol-like pigments were all poor. The chromogen that appears in such eggs, and which is responsible for the brown coloration that develops when the eggs are stored under refrigeration in the shell is a pH indicator. The brown color develops in an alkaline medium and reverts to yellow when the medium is acidified.

Conditions that reduce the epsilon free amino lysine (heat, especially under relatively dry conditions) apparently have no effect on the chromogen concentration in the meal that is responsible for the brown yolks.

Appearance of pink coloration in the albumin seems to be independent of the appearance of brown coloration in the yolk. The appearance of waxy or semisolid yolks does not seem to be related in a simple way to the appearance of either pink coloration in the albumin or brown color in the yolks.

These and other results of the study are reported in detail in a paper, "Cottonseed Meal in Poultry Feed. Discolorations in Stored Shell Eggs Produced by Hens Fed Cottonseed Meal," published in the Journal of Agricultural and Food Chemistry. Single copies of reprints may be obtained without cost from the Southern Utilization Research and Development Division, P. O. Box 19687, New Orleans 19, La., by requesting Reprint No. 2065.

Cargill Promotes Three

MINNEAPOLIS — Promotions and new assignments for three Cargill, Inc., grain merchants have been announced here by W. B. Saunders, grain division vice president.

Named were: Gerald D. Mitchell, Milwaukee branch manager, to merchant in charge of barley and oats trading at Cargill headquarters here; Karl G. Estes, Kansas City merchant, to Milwaukee branch manager; Wesley R. McMillen, Seaford, Del., grain office, to the Kansas City merchandising staff.

Mr. Mitchell will replace Robert J. Hatch, recently named manager of all coarse grain merchandising. Mr. Mitchell joined Cargill in 1952 and was named the firm's "merchant of the year" in 1960.

Mr. Estes joined Cargill in 1953 and has had merchandising assignments in Minneapolis, Sioux City, Iowa, Toledo, Ohio and Omaha. He went to Kansas City in 1958.

Mr. McMillen has been assigned to Cargill's grain branch office in Seaford since 1958.

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Pigs go for the sweeter taste of Midwest Sweet-Dried Whole Whey — start eating pre-starter and starter rations earlier.

Pigs gain faster and more efficiently, too — a result of the excellent nutritional qualities of Midwest Sweet-Dried Whole Whey — the lactose (which is the most readily digested carbohydrate for baby animals), the high quality milk protein, minerals and valuable water soluble vitamins.

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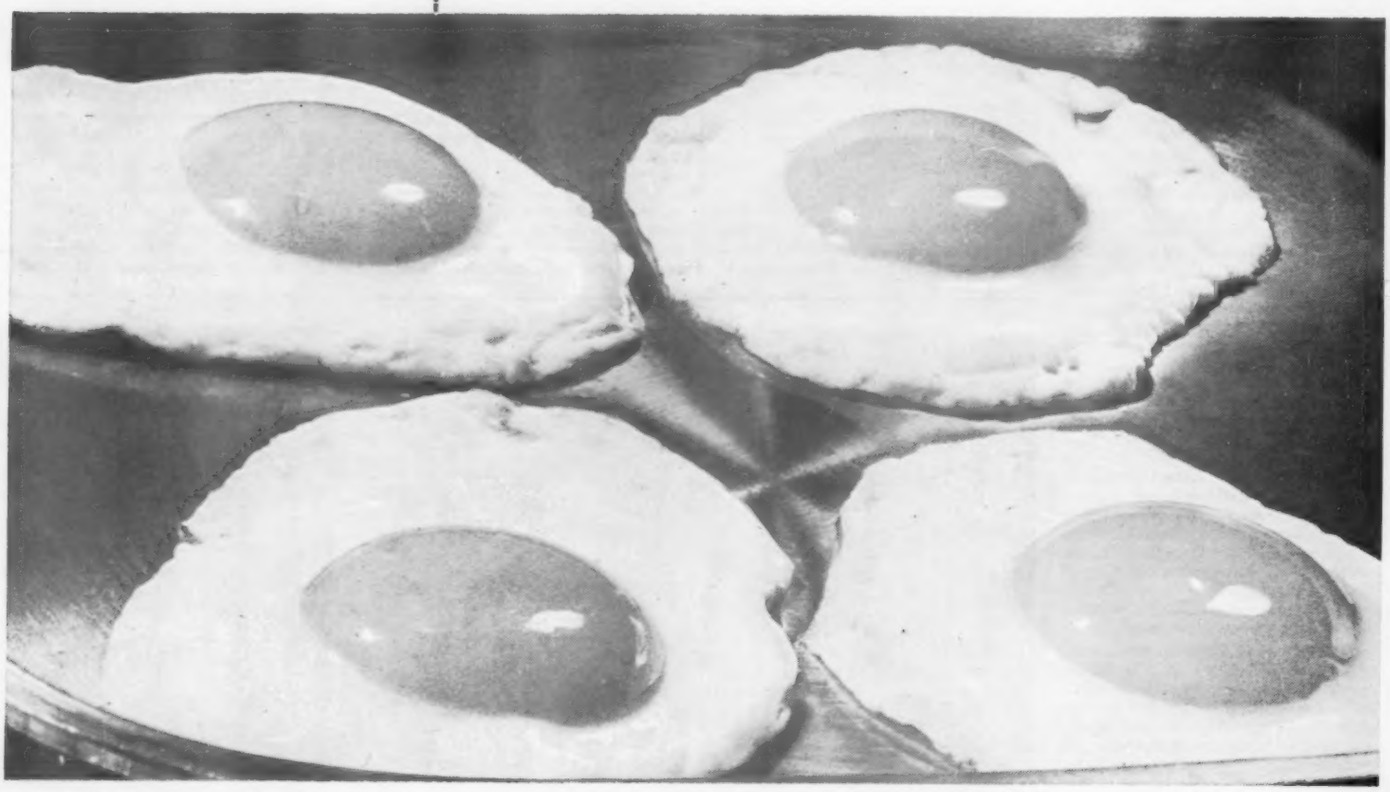
Report on Hy-Line Precision Genetics

How research "fixes" all-around quality in Hy-Line eggs



Opening his mail one morning, an eastern Hy-Line hatcheryman read the following letter from a New Jersey egg buyer: "Packing as I do, thousands of cases of eggs a week," the writer said, ". . . I can safely say that if I had to settle on one kind of bird for all-around excellence of egg quality, that bird would be the Hy-Line."

"To me, as a practical man," the letter continued, "egg quality is made up of many factors: freedom from tints, freedom from blood and meat spots, good shell strength, good shell texture, desirable shape, uniformity of size and shape, large size, firm albumens, and good keeping qualities."

The egg buyer concluded: "While not perfect in every respect, the Hy-Line egg comes closer to what I want than eggs from any other chicken I know about."

That egg buyer—like egg wholesalers and consumers throughout the U. S.—looks for *all-around* quality in an egg. And that is precisely what Hy-Line scientists work to achieve. As H. B. Wallace, general manager of Hy-Line Poultry Farms, puts it: "I consider 'egg quality' a broad term to describe the egg in *all* of the respects which influence its favorable acceptance by the consumer."

The superior all-around quality of Hy-Line eggs is the direct result of Hy-Line Precision Genetics—which we think is the most exacting breeding program in the poultry industry.

In a constant effort to further improve egg quality, Hy-Line scientists break out 200,000 eggs each year. They measure albumen thickness in relation to egg weight (Haugh units). They check for blood and meat spots. They observe the shell for strength, texture, checks and cracks. Before breaking the eggs, they score them for shape, size and color. Birds which do not meet rigid Hy-Line egg quality standards are discarded.

With the aid of the latest genetic tools, desired egg quality traits are purified in inbred lines. These tools include *blood grouping*, which makes it possible to develop inbred lines more precisely than ever before. And a massive testing program, which measures the "combining ability" of inbred lines.

The result of the Hy-Line Precision Genetics program is an outstanding Hy-Line bird capable of producing eggs uniformly good and appealing to the homemaker.

Hy-Line® CHICKS

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F-8 Des Moines, Iowa

New Poultry Disease Control Methods Outlined at N. H. Event

By RICHARD WARREN
University of New Hampshire

DURHAM, N.H.—A new method of controlling CRD through dipping of hatching eggs in a solution of antibiotic was one of the many topics at the tenth University of New Hampshire Poultry Health Conference held here.

Over 500 poultrymen and allied workers from the eastern part of the U.S. and Canada attended the meeting to get new ideas on maintaining healthy poultry flocks.

CRD CONTROL—Dr. P. P. Levine, New York State Veterinary College, Cornell University, Ithaca, N.Y., presented information on a new method of controlling CRD. This program calls for the dipping of the hatching eggs in a solution of antibiotic. This has been shown under laboratory and field conditions to greatly reduce or eliminate the amount of PPLO that is transmitted to the chicks through the hatching eggs. If this organism is not present CRD will not develop in the flock.

The procedure followed in this work was to dip the hatching eggs in a solution of 400 parts per million of erythromycin for 30 minutes. The eggs were heated to incubator temperature before dipping into this cool solution. This caused the contents of the egg to contract and resulted in sucking the antibiotic solution through the pores of the shell.

CHOLERA CONTROL—Dr. Kenneth L. Heddleston of the USDA Animal Disease and Parasite Division, Beltsville, Md., discussed the control of fowl cholera. This is one of the oldest known poultry diseases and is still causing severe economic losses in affected flocks. The blood test to detect carriers is of no value in controlling this disease. It doesn't appear to be a hatching-egg-transmitted disease.

Drugs will help to reduce the losses —but have failed to prevent or eliminate the disease.

Immunization is one of the oldest methods of control. The first vaccine for fowl cholera was developed in Europe in 1880. This vaccine was not successful but led to the development of other vaccines for animal and human diseases. Recently a bivalent vaccine has been developed at the National Animal Disease Laboratory that gives good protection for nine months.

Sanitation is still the best method of preventing and controlling fowl cholera. This disease isn't as contageous as some poultry diseases and sanitation can be used effectively to prevent introducing it and to clean up affected premises, according to Dr. Heddleston.

SALMONELLA ORGANISMS — Dr. George Faddoul, University of Massachusetts Diagnostic Laboratory, Waltham, Mass., discussed the recovery and typing of salmonella organisms at the Waltham Diagnostic Laboratory. The organisms isolated have been sent to the U.S. Public Health Service, Chamblee, Ga., for serologic typing. There are over 400 known salmonella organisms and of these 100 have been found in poultry. Some are known to be harmful to poultry and some cause sickness in people; others may not be at all harmful. At Waltham, they have isolated salmonellas from chickens, turkeys, sparrows, canaries, hornbills, parakeets, pheasants, rabbits, swans, ducks, pigeons and mice and from poultry feed. Other stations have also found them in poultry feeds. This is apparently due to lack of the proper sanitation in plants that process and store protein supplements.

Dr. Faddoul advocated not using known infected flocks as breeders, and using plenty of formaldehyde gas in incubator fumigation. He also advised keeping wild birds away from poultry flocks.

COCCIDIOSIS CONTROL — A panel on coccidiosis control brought out considerable new information on the control of this disease. Dr. George Christie of Eastern States Farmers' Exchange, West Springfield, Mass., discussed new coccidiostats for broilers. He said that the coccidiostat business represents over $20 million a year in this country. About $17 million of this is for coccidiostats to be used in broiler feeds. The feed companies, he said, must annually reappraise the situation in deciding what to use. With broilers, the objective is to prevent the coccidiosis without hurting the growth or feed conversion results. With replacements, the objective is to develop immunity without letting the flock have losses or a setback.

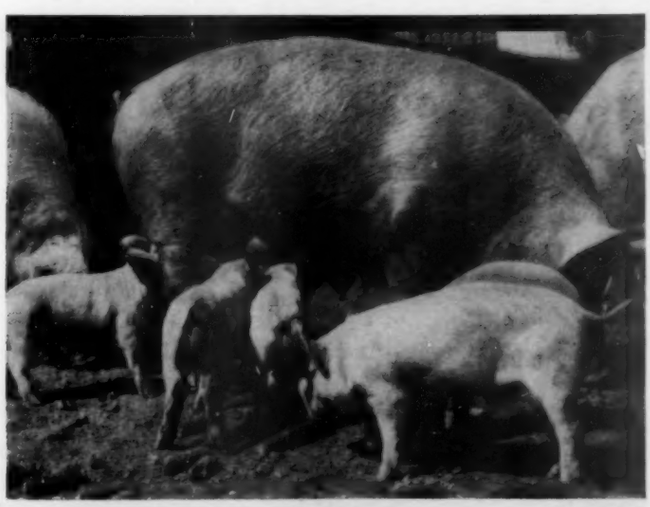
They have tested zoalene both in the laboratory and in the field for the past three years and have found no real criticism with it for broilers. It is superior to nicarbozine in controlling certain coccidiosis species. No withdrawal period is required before the birds are marketed.

Amprolium, they have found will consistently improve feed conversion and is safe to use even at ligh levels. Neither zoalene nor amprolium have been cleared to be used with a high level antibiotic.

Dr. Christie said that some have felt that coccidiosis triggers leucosis, but this hasn't been shown to be the case. New and better coccidiostats will be developed, he predicted.

Robert Bickford, Wirthmore Feeds, discussed the use of Cocci-Vac for controlling coccidiosis in repalcement flocks. They tried the vaccine with five, six and seven species of coccidi-

Which test proves the value



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POULTRY HEALTH — Participants in the New Hampshire Poultry Health Conference are shown above. Speakers and chairmen are shown in the photo at the left. They are, from the left: Dr. A. C. Tepper, Merrimack Farmers' Exchange, Concord, N.H., chairman; Dr. Stephen King, U.S. Department of Agriculture, Beltsville, Md., speaker; Dr. Jerry Roundtree, Lipman Bros., Augusta, Me., moderator of final panel; Dr. John Hammond, O. A. Newton & Son, Bridgeville, Del., speaker; Thomas Danko, associate county agent, Concord, N.H., chairman, and Dr. Stanley Smith, director, poultry nutrition, G.L.F., Ithaca, N.Y., speaker. In the photo at the right are members of a panel on coccidiosis control. From the left, they are: Robert Bickford, Wirthmore Feeds, Waltham, Mass.; Richard Strout, University of New Hampshire, and Dr. George Christie, Eastern States Farmers' Exchange, Springfield, Mass.

osis and found they get a lot fewer "breaks" where the seven species vaccine is used. With this, 7% of the flocks vaccinated had outbreaks that required treatment. The most satisfactory coccidiostats to use with Cocci-Vac are S.Q., Trithiadol or Bifuran according to these findings. Mr. Bickford felt that vaccination should be used for replacements by those who have had trouble with coccidiosis in the past. He listed several precautions to keep in mind when using it.

Richard Strout, parasitologist at the University of New Hampshire poultry science department, discussed field trials with amprolium for replacements. Ten flocks were raised in New Hampshire, using .004% Amprol in a complete ration. In all cases the coccidiostat protected the birds against coccidiosis during the growing period. Three flocks showed symptoms of mild coccidiosis 2-5 weeks following drug removal, but no coccidiosis problems were encountered on those farms using the coccidiostat to 15-16 weeks. There appeared to be no adverse effects of the drug on sexual maturity or egg production. Further studies indicated that Amprol did allow immunity to develop following sufficient exposure to the coccidial species during the growing period.

Mr. Strout indicated that approximately 84% of all birds raised in the country this year will be meat birds. Because of this, coccidiostats are made to be extremely effective. When using these drugs on replacements, it is a question of using highly efficient compounds in such a manner that birds will be protected against the disease, but the development of immunity will not be impaired.

LEUCOSIS CONTROL—"Progress in Controlling Leucosis" was discussed by Dr. Steven C. King, chief, Poultry Research Branch, USDA, Beltsville, Md. Leucosis problems, he said, seem to be on the increase. This disease costs the poultry industry $65-80 million a year. In the random sample tests, 40% of the mortality is from leucosis. Breeding for resistance has apparently reduced the leucosis, but we see flare-ups in the resistant strains. This indicates there are problems of management.

Research on this disease has shown that some types of leucosis can be reduced by breeding for resistant lines and that growing chicks in isolation will help to reduce it.

The work at the regional laboratory at East Lansing, Mich., has shown a lot about the way the resistance is inherited, and how the disease is transmitted. They have developed a vaccine to use on the parents that shows promise in reducing the amount of certain types of leucosis in the offspring. They have been able to grow the virus that causes the disease on embryos and on tissue cultures, but there is no definite answer to this problem as yet.

Dr. King said that the problems with leucosis are examples of "too few working with too little." Pathologists do not like to work on this disease because progress is so slow. The

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Arsanilic Acid Works Best When Disease Level Is Highest. No, not many of your customers will ever try out Arsanilic Acid under the nearly ideal conditions shown in the top picture. But that's the point . . . that's why so many growers have learned to rely on Arsanilic Acid. That's why they ask for it in all their swine feeds, even though they'll never operate under conditions as far from ideal as those shown in the bottom picture.

A healthy-looking hog may be suffering from low-level disease. Poor weight gains result—feed efficiency falls off. When this happens, you have a situation made to order for Arsanilic Acid. It goes right to work in the gut . . . helps combat harmful bacteria . . . helps protect pigs from active disease. Arsanilic Acid does its work when there's a job for it to do . . . and, under practical conditions, there usually is a job for it to do—all the way to market.

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Available In Two Convenient Forms. Arsanilic Acid is available in pure form or in premix form (one pound of premix is enough for one ton of complete feed). It's manufactured by Abbott and sold under the trade name PRO-GEN®. Ask your Abbott man for details, or call Abbott Laboratories, Chemical Marketing Div., North Chicago, Illinois.

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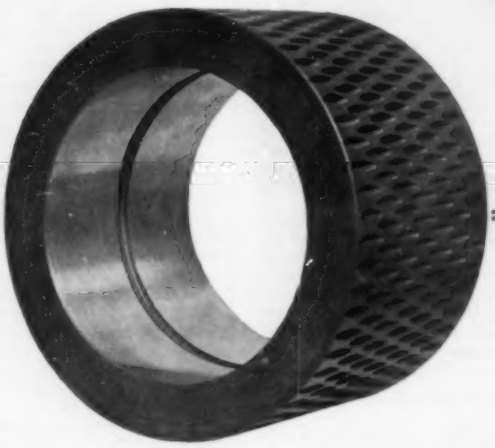

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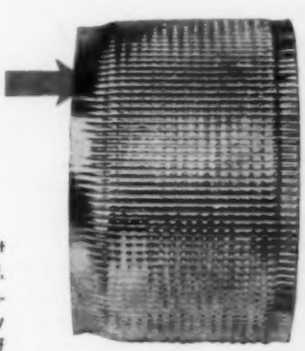

The actual unretouched photo at right shows a roll which, when removed, had lost 33 percent of the die capacity. How many of your dies are only half used at one-third to one-half production? Write now on your letterhead describing your type of mill and we'll rush complete information. We manufacture rolls and components for most pellet mills.

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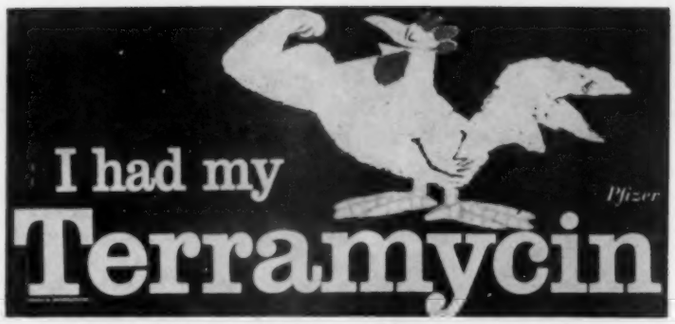

ADVERTISING WINNER—This Chas. F. Pfizer & Co., Inc., New York, design won first place in the agricultural classification at the 29th National Competition of Outdoor Advertising Art, sponsored by the Art Directors Club of Chicago. Leo Burnett Co., Inc., is the agency, Ted Carr the artist and John Clayton, art director.

facilities at East Lansing were built in 1937 and 1938. They were all right then but new laboratory facilities are now needed in light of new developments. The solution to this problem in chickens may help in solving the cancer problem in man, he said.

CAPILLARIA WORMS — Capillaria worm control was discussed by Dr. C. I. Angstrom, director, regional veterinary laboratory, Kingston, N.Y., and Stanley Smith, director of poultry nutrition, G.L.F., Ithaca, N.Y.

Dr. Angstrom reported that the laboratories in New England and New York state are finding an increasing percentage of flocks affected with these worms. In the late 1940's, he found vitamin A deficiency in many of the flocks affected with capillaria worms. The extra vitamin A seemed to neutralize the damage from these worms.

Hygromycin which has been recommended for controlling these worms has not worked out, he reported. He has found a high incidence of these worms in the cases submitted in the late summer and fall months. Also, he has found that after the birds have had them for several months they do not seem to cause as much trouble as when they are first affected.

The life cycle of these worms is direct; they don't spread by the baby chicks or through the air. The basis for solving the problem is to stop the spread, he said. This means controlling visitors, not introducing grown or growing chickens, controlling pigeons and taking other sanitary precautions.

Mr. Smith felt that management has a lot to do with the capillaria worm problems. It is very difficult to erradicate on farms where birds are ranged. By housing layers in cages the worms can be eliminated. He, too, reported that hygromycin hasn't been found effective in the control of capillaria. He felt that some systemic drug may be the answer to this problem.

They are recommending 3,000 additional units of vitamin A per pound of feed in all mash rations. High levels are recommended in New England. He reported that some work indicates that the water dispersible forms may be more available than when the extra vitamin A is mixed with the feed.

They have made a lot of observations concerning the blonde or white yolk problem and have come to the following conclusions:

(1) It is not related to the feed or feeding program.

(2) It is not confined to any one strain of birds.

(3) It is not related to the vaccination or medication program.

(4) Usually 5 to 10% of the eggs produced by affected flocks showed blonde yolks.

(5) The condition cleared up spontaneously on some farms after about two months time.

(6) All flocks observed with this problem either had known cases of capillaria or were later found to have them.

(7) The problem cleared while the flock was being treated with a high level of vitamin A.

(8) Hatchery observations over a period of years shows that the blonde

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yolk problem occurred before veterinarians could find capillaria in the flock. Later checks showed them to be present.

CONDEMNATIONS — Dr. Dank Morris, chief veterinary pathologist, Georgia Poultry Laboratory, Gainesville, Ga., discussed "Broiler Condemnations and Down Grading." Dr. Morris showed how this problem had increased with the mandatory inspection program. One plant that processes about 8 million broilers annually and was on the voluntary inspection program showed the following percentage of condemnations:

January 1959	0.96%
January, 1960	6.74%
February, 1959	0.94%
February, 1960	6.1%
March, 1959	1.58%
March, 1960	5.44%
April, 1959	1.57%
April, 1960	7.77%

The broilers they raised in 1960 they believed were healthier. They grew better and made better feed conversion than those raised in 1959. The problem is to "get them by the inspector." We have been concerned with growth rates, feed conversion and liveability, he said, but now we must also be concerned with "getting them by the inspector." Treating disease, he said, is not the answer to this problem. We must learn to raise the birds free of these troubles that are causing the condemnations. Most of the problem is caused by infectious bronchitis, PPLO and Newcastle disease, he said.

FEED ADDITIVES—The "Use of Feed Additives in the Control of Disease" was discussed by Dr. John Hammond, vice president, O. A. Newton & Son, Bridgeville, Del. Dr. Hammond emphasized the moral and legal responsibility involved in using feed additives. Drugs and additives are no substitute for sanitation, he said. Two dollars worth of disinfectant properly used, is of more value than $100 worth of drugs. He feels that used feed bags, used chick boxes, servicemen and attendants frequently carry disease from one flock to another. He emphasized getting an accurate diagnosis on every outbreak and working with your competitors to stamp out sources of trouble. The use of preventives and treatment medication should be decided after talking with your state laboratory and local veterinarian. Certain drugs will work in some areas but not in others, he said. Dr. Hammond predicted that in 10 years, we will be rotating the coccidiostats and antitbiotics to help cut down on resistant organisms.

DISCUSSION PERIODS—The conference started and ended with lively discussion periods. The first program was a chance to ask questions of the diagnosticians. Dr. Alan Corbett, University of New Hampshire; Dr. Faddoul; Dr. Angstrom and Dr. Morris all took part in this and were bombarded with questions. The final panel concluded with those on the program answering questions from the audience. Dr. Jerry Roundtree, Lipman & Sons, Augusta, Me., was the moderator. This discussion brought out more information on the subjects discussed at the conference.

FDA Budget Would Add 60 Inspectors

DES MOINES—The budget for the fiscal year 1962, proposed by the outgoing Eisenhower Administration for the Food and Drug Administration last month, would boost funds from $19 million in the current fiscal year to $25.4 million in 1962, the Animal Health Institute reports.

An AHI bulletin said that the 20.6% increase in funds would provide a 13.7% boost in personnel. This increase of the FDA force from 2,199 to 2,500 would reportedly include 84 more persons for drug regulation and 42 for food additives. Among the 301 new employees would be 60 more inspectors, making the total inspectional force 685, it was reported.

The budget recommendations, of course, are subject to the views of the Kennedy Administration, but it is considered unlikely that any changes will be made in the FDA budget.

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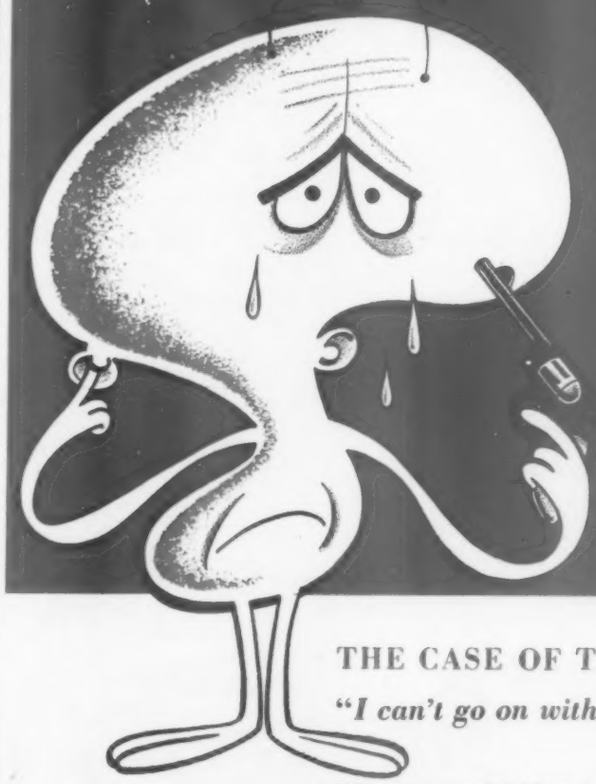

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NTF Concerned Over Turkey Intentions

KANSAS CITY — Concern regarding the probable size of the 1961 turkey crop and planning for ways and means of moving the crop into consumption channels were the main topics of discussion at the meeting of the National Turkey Federation Executive Committee here.

NTF representatives from major production areas agreed there has been little change to date in growers' intentions and it appears the industry is on its way to produce a new record crop. While it is the general opinion the crop may not be 20% larger as indicated by the U.S. Department of Agriculture's report of growers' intentions, it is agreed there will be a large crop.

A total basic budget of $220,519.59 was approved for turkey promotion this year. While this is one of the largest budgets in the history of the Eat More Turkey campaign, officers of the federation reportedly are not satisfied it is enough to meet the emergency situation created by the large crop this year. It was decided an emergency crash program should be put into action. This crash program involves asking all state turkey associations to make available an extra 25% above their current year's quota to the EMT fund. Allied industry firms also will be invited to assist in this crash program.

Denver was given tentative approval as the location of the 1963 NTF convention. Since some details of arrangements have not been verified, final decision will be based on completing these arrangements satisfactorily, NTF announced.

Plans were discussed for the 1962 NTF convention which will be held in Dallas Jan. 9-11.

Increased Research

NTF said that in view of the need for stepped up research in connection with diseases and conditions resulting in excessive condemnations of turkeys and other poultry at time of slaughter, the federation approved a program to request a special appropriation of government research funds. Action was taken to ask all poultry industry organizations to back a request for a special appropriation of $1 million to speed research on airsaculitis, avian leukosis and other causes of excessive condemnations of poultry.

The federation reiterated its long-standing policy of opposition to government price support and mandatory controls of turkey production, according to the meeting report.

Plans were made to re-introduce in this session of Congress the bill sponsored by the National Turkey Federation, which is generally known as the Turkey Enabling Act. This bill would provide a means of collecting funds on a uniform basis to carry on an enlarged and more effective program of market development, merchandising, research and stabilization.

It was reported that it is the opinion of officers that it is time the federation gets its bill re-introduced as some other bills of this general type already have been introduced. Since these other bills provide for mandatory production control and the federation opposes such provisions, it was considered wise to get on record, NTF said.

USDA Purchases

In view of the large crop of turkey breeder hens coming to market this spring and the fact these will be an excellent low cost high protein food, a request was made to USDA to consider purchases for the school lunch program, for the food for the needy program, and the armed forces. It was stipulated, however, that any turkeys purchased should be distributed this spring and early summer in order that this would not interfere with purchases of new crop turkeys this fall.

Officers in attendance at the meeting were: Carl Stout, president, Richland, Mo.; Morris Smith, first vice president, Ellicott City, Md.; Robert McPherrin, second vice president, Sunnymead, Cal.; Ray Thompson, third vice president, Ellsworth, Iowa; Roy Ritter, fourth vice president, Springdale, Ark; C. N. Thurnbeck, immediate past president, Forest Lake, Minn.; William D. Wampler, Harrisonburg, Va., and John Morgan, Layton, Utah. Staff members from the headquarters office in Mount Morris, Ill., attending, included M. C. Small, executive secretary-treasurer; G. L. Walts, assistant executive secretary-treasurer, and Betty Warner, administrative assistant.

There were a number of past presidents, directors, and others present for the meeting, NTF reported.

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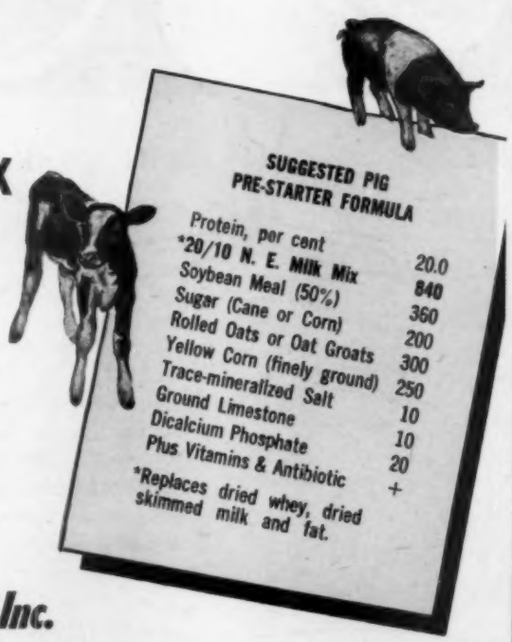
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Wirthmore Feeds, Inc., Names Area Managers

WALTHAM, MASS.—The promotion of Leonard E. Varnum to area general manager for Wirthmore Feeds, Inc., with headquarters at the company's local operation at Fairfield, Mass., has been announced by R. D. Emmons, general sales manager.

Mr. Varnum has held several supervisory positions for Wirthmore since joining the company in 1948. In his new position, Mr. Varnum will be responsible for Wirthmore distribution in the area.

T. C. Sweetser, who has held this position for the past two years, has been transferred to area manager at Steep Falls. He joined Wirthmore in 1954 and has held several managerial positions.

Mr. Sweetser's headquarters will be at the new company operation which is now being constructed at Steep Falls where he will be in charge of the company's area activities.

Phosphate Institute Gives Research Funds

MANHATTAN, KANSAS—The Soft Phosphate Research Institute, Inc., Ocala, Fla., has donated $4,000 to the Kansas State University department of flour and feed milling industries, John A. Shellenberger, head of the department, announced.

The grant will be used to investigate the effect of colloidal (soft) materials on binding of feed pellets. It also permits study of basic factors that cause particle adhesion in pelleted feeds, the announcement said.

Dr. Harry B. Pfost, department of flour and feed milling industries, will direct the research.

RESEARCH GRANTS

ITHACA, N.Y.—The Cooperative G.L.F. Exchange, Inc., last year gave financial support, in the form of grants-in-aid, to more than 20 research projects at the New York State College of Agriculture, Cornell University, according to Cornell officials. G.L.F. contributions totalling more than $70,000 are helping college of agriculture scientists uncover new information that may mean improved marketing methods, healthier farm animals, higher quality crops, more reliable crop yields and improved food products.

Puerto Rican Plant

NEW YORK—Little Rock Meat Packing Co., Little Rock, Ark., has opened a $3.5 million packing house in Puerto Rico, the island's Economic Development Administraton announced here.

A spokesman for the "Operation Bootstrap" development agency in New York said that the new plant is expected to meet much of the Caribbean commonwealth's $60 million a year market for meat and meat products.

The new packing house is geared to process 52,000 head of cattle, an equal number of hogs and 3 million chickens annually. All livestock will be purchased in Puerto Rico from local producers who are fast expanding to meet the demand.

Almost 700 U.S. firms have expanded to Puerto Rico under the EDA-led "Bootstrap" program including such food processors as Star Kist and Van Camp Seafood.

EDA says it does not accept "runaway" industries from the U.S. mainland.

FEED MAN DIES

SAN FERNANDO, CAL.—Joseph A. (Joe) Morrow, owner of the Gillmor Feed & Seed Store and a San Fernando city councilman, died recently. He was 49.

Cereal Chemists Group Elects New Officers

WILLIAMSVILLE, N.Y. — Frank Wagner, Feedstuffs Laboratories, is the new chairman of the Niagara Frontier Section, American Association of Cereal Chemists.

Other officers elected at the January meeting of the group are: Charles Bronold, George Urban Milling Co., vice chairman; A. C. Anderson, Standard Milling Co., treasurer, and George Willkens, Cooperative G.L.F. Exchange, Inc.

Executive committee members are: Stanley Skelskie, Norman Schack and Henry De Oca, Jr.

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Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

April 21—Alabama Poultry Jubilee; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sec., Alabama Poultry Industry Assn., W. L. Walsh, Box 567, Montgomery.

May 14-16 — National Cottonseed Products Assn.; Eden Roc Hotel, Miami Beach, Fla.; sec., John F. Moloney, 43 N. Cleveland St., Memphis 4.

June 1-2 — Arizona Ranch School and Cattle Feeders Day; University of Arizona, Tucson; Dr. Bruce R. Taylor, head, Animal Science Dept.

Feb. 27—New Mexico Feeders Day; New Mexico State University Experiment Station, University Park; Dr. John H. Knox, chm., Animal Husbandry Dept.

Feb. 28-March 1 — Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke; sec., J. Paul Williams, Virginia State Feed Assn., 615 E. Franklin St., Richmond.

March 1-2 — Colorado Livestock Days; March 1, Sheep and Wool School, Swine Day and Beef Producer Day; March 2, Feeders Day; Colorado State University, Fort Collins; chm., E. K. McKellar.

March 1-2 — Poultry Health and Management Short Course; Clemson College, Clemson, S.C.; Dr. F. W. Boebel, Poultry Pathologist.

March 7 — Iowa Swine Production Conference; Memorial Union, Iowa State University, Ames; Animal Husbandry Dept.

March 7-8 — Grain Sorghum Research and Utilization Conference; Crystal Ballroom, Herring Hotel, Amarillo, Texas; Grain Sorghum Producers Assn., 322 Petroleum Bldg., Amarillo.

March 8—Mutual Millers & Feed Dealers Assn.; Statler-Hilton Hotel, Buffalo, N.Y.; sec., Mrs. Donald E. Mattison, Box 8, Cattaraugus, N.Y.

March 8—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; L. E. Carpenter, Executive Director, Distillers Feed Research Council, 1232 Enquirer Bldg., Cincinnati 2.

March 8-9 — Nebraska Grain & Feed Dealers Assn.; Sheraton-Fontenelle Hotel, Omaha; sec., Howard W. Elm, Trust Bldg., Lincoln, Neb.

March 10-11—Oklahoma Feed Industry Conference and Workshop; Oklahoma State University, Stillwater; chm., Dr. Rollin Thayer, Poultry Science Dept.

March 12-13—Quad-State Grain & Feed Convention; Sheraton-Martin Hotel, Sioux City, Iowa; Sioux City Grain & Feed Club, Box 341.

March 15—Commercial Egg Production Short Course; University of Georgia, Athens; Dewey McNiece, Extension Poultry Dept.

March 16-17—Oregon Feed & Seed Dealers Assn.; Sheraton-Portland Hotel, Portland; mgr., Russ Hays, 702 Lewis Bldg., Portland 4.

March 16-17—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. R. D. Creek, Poultry Husbandry Dept., University of Maryland, College Park.

March 20-24—Grain & Feed Dealers National Assn.; Washington, D.C.; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

March 23—Terminal Grain Weighmasters National Assn.; Statler Hilton Hotel, Washington, D.C.; Pres.,

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FEEDSTUFFS

A. E. Schultz, Toledo Board of Trade, Toledo 4, Ohio.

April 3-4—National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

April 5—Purdue Egg Day; Purdue University, Lafayette, Ind.; David D. Jackson, Ext. Poultryman.

April 6—Feeders Day; University of Nebraska Experiment Station, North Platte; James C. Adams, Supt.

April 7—Missouri Livestock Day; University of Missouri, Columbia.

April 9-13 — American Association of Cereal Chemists; Baker Hotel, Dallas, Texas; 1955 University Ave., St. Paul 4, Minn.

April 10-12—Poultry & Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

April 13-15—Pacific Dairy & Poultry Assn. Exposition and Convention; Riviera Hotel, Las Vegas, Nev.; sec., Carl E. Nail, 1304 7th St., Los Angeles 21, Cal.

April 14-15—Texas Grain & Feed Assn.; Baker Hotel, Dallas, Texas; sec., R. B. Bowden, 407 Fort Worth Club Bldg., Fort Worth 2.

April 17-18—Seventh Regional Area Convention, National Renderers Assn.; St. Paul Hotel, St. Paul, Minn.; sec., Harold Weiss, Gulf Soap Corp., Arabi, Louisiana.

April 20—Nebraska Beef Cattle Feeders Day; University of Nebraska, Lincoln; Dr. R. M. Koch, chairman, animal husbandry department.

April 20-22 — Beef Cattle Short Course; University of Florida, Gainesville; Dr. T. J. Cunha, head, Animal Husbandry & Nutrition Dept.

April 20-22—California Hay, Grain & Feed Dealers Assn.; Jack Tar Hotel, San Francisco; sec., Leo L. Johnson, Blue Anchor Bldg., 1400 10th St., Sacramento 14.

April 22—Alabama Poultry Industry Promotion Dinner; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sponsored by Alabama Poultry Industry Assn.; sec., W. L. Walsh, Box 567, Montgomery.

CALENDAR FOR 1961-62

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April 24-26—Animal Health Institute; Mayflower Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

April 28—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, animal science department.

May 5—Broiler Short Course and Chicken-of-Tomorrow Day; University of Georgia, Athens; Dewey McNiece, Extension Poultry Dept.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

May 7-10—Association of American Feed Control Officials; Hamilton Hotel, Chicago; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

May 14-15—Missouri Grain & Feed Assn.; Hotel Coronado, St. Louis, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 4-6 — Indiana Grain & Feed Dealers Assn.; French Lick-Sheraton Hotel, French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Building, Indianapolis 4.

June 8-11—Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18,

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June 9-10—Arkansas Poultry Festival; Little Rock; mgr., Arkansas Poultry Federation, John Haid, P.O. Box 1446, Little Rock.

June 12-13—Eastern Federation of Feed Merchants; Concord Hotel, Lake Kiamesha, N.Y.; sec., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 13-16—Northeastern Poultry Producers Council Egg Quality School; Pennsylvania State University, University Park, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

June 15-17—Delmarva Chicken Festival; Harrington, Del.; Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

June 19-21—American Association of Feed Microscopists Annual Meeting; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 19-24—Feed Microscopy Short Course, sponsored by American Association of Feed Microscopists; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 20-21—Alabama Poultry Industry Assn.; Whitley Hotel, Montgomery, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

July 14-18—Georgia Feed Assn.; Grand Bahama Club, Grand Bahama Island; sec., W. E. Merritt, Suite 1-A, 361 E. Paces Ferry Rd. N.E., Atlanta 5.

July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

July 24-28—Southeastern Egg Quality and Grading School; Auburn University, Auburn, Ala.; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 24-26—North Carolina Feed Manufacturers Assn; Virginia Beach, N.C.; sec., McNair Evans, Box 44, Mocksville.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; Dewey McNiece, Extension Poultry Dept., University of Georgia, Athens.

Sept. 11-13—Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc., pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 19-21—Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 27-29—National Feed Ingredients Assn.; Lake Lawn Lodge, Delavan, Wis.; sec., I. Levin, 517½ E. Locust St., Des Moines 9, Iowa.

Sept. 27-29—Pennsylvania Millers & Feed Dealers Assn.; Hotel Hershey, Hershey, Pa.; sec., D. W. Parke, P.O. Box 329, Ephrata, Pa.

Sept. 28-29—Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; Dr. E. L. Stephenson, animal industry and veterinary science department.

Oct. 3-5—Northeastern Poultry Producers Council Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

Oct. 4-6—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Poultry Science Dept.

Oct. 10-11—Iowa Poultry Convention; Veteran Memorial Auditorium, Des Moines; sec., Iowa Poultry Assn., LeRoy Kruskop, 535 E. Lincoln Way, Ames, Iowa.

Oct. 23-25—Centennial Nutrition Conference; Hotel Muehlebach, Kansas City 5, Mo.; sponsored by Midwest Feed Manufacturers Assn. and Land-Grant Colleges in Midwest's area; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 26-28—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

Nov. 1—Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Dr. Philip Derse, Wisconsin Alumni Research Foundation, 506 Walnut St., Madison 5, Wis.

Nov. 1-2—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 8-9—Illinois Feed Assn.-Illinois Poultry and Hatchery Federation joint convention; Springfield Armory, Springfield; sec. I.F.A., Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec. I.P.H.F., Aubrey Harless, Shelbyville, Ill.

1962

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

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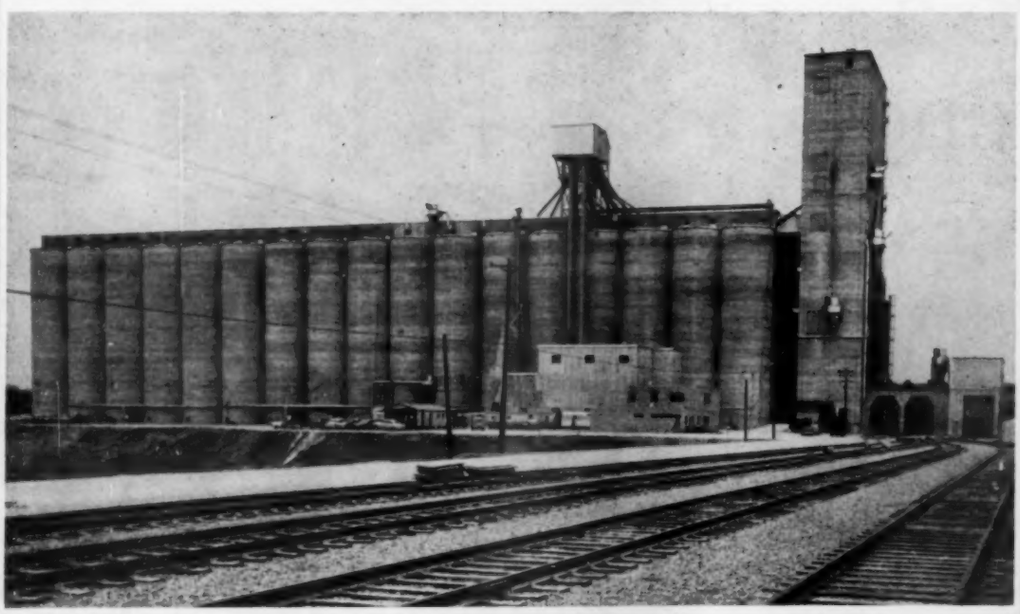

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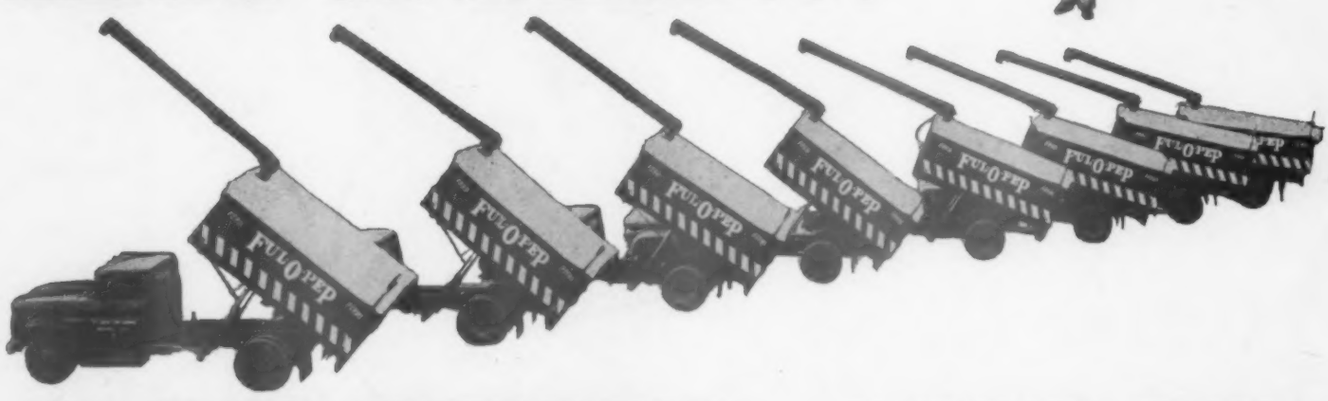

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ADM Names D. Dagley Southwest Manager

MINNEAPOLIS — Appointment of Delbert Dagley as manager of Archer - Daniels - Midland Co.'s southwestern grain operations exclusive of Kansas City, was announced by Ralph Bruce, vice president and manager of ADM's central grain division.

Mr. Dagley will be responsible for merchandising and storing grain at ADM sub-terminal elevators in Hutchinson, Fredonia and Wellington, Kansas; Clinton, Mo., and Kenedy, Texas.

Since joining the company he has been in charge of the Hutchinson grain operation. Mr. Dagley formerly was manager of the grain department of St. Louis (Mo.) Flour Mills.

C. J. Gundelfinger remains in charge of ADM's Kansas City grain office.

Leo McIntyre Jack Rovics

Nopco Chemical Names Ag Representatives

NEWARK, N.J.—Appointment of Jack J. Rovics and Leo R. McIntyre as field representatives for agricultural department products of the Nopco Chemical Co., Newark, has been announced by R. T. Whelan, agricultural department sales manager. Both men will also service the pharmaceutical and food industries with vitamins, chemicals and food additives.

Both Mr. Rovics and Mr. McIntyre have had considerable experience in the nutritional and feed supplement field. Mr. Rovics, a nutritionist, is well known to feed manufacturers through his feed formulation work as head of Nopco's Technical Service Bureau.

As Nopco field representative, he will serve the company throughout Maryland, Delaware and District of Columbia and portions of New Jersey, Pennsylvania and Virginia.

Mr. McIntyre has been a biologist, chemist and salesman in the chemical field, serving most recently as eastern sales representative in the special markets department of Nopco's fine chemicals division working with the pharmaceutical and food industries.

In his new assignment, Mr. McIntyre will serve feed clients in addition to those in the pharmaceutical and food fields throughout New York, New England, Canada and portions of New Jersey and Pennsylvania.

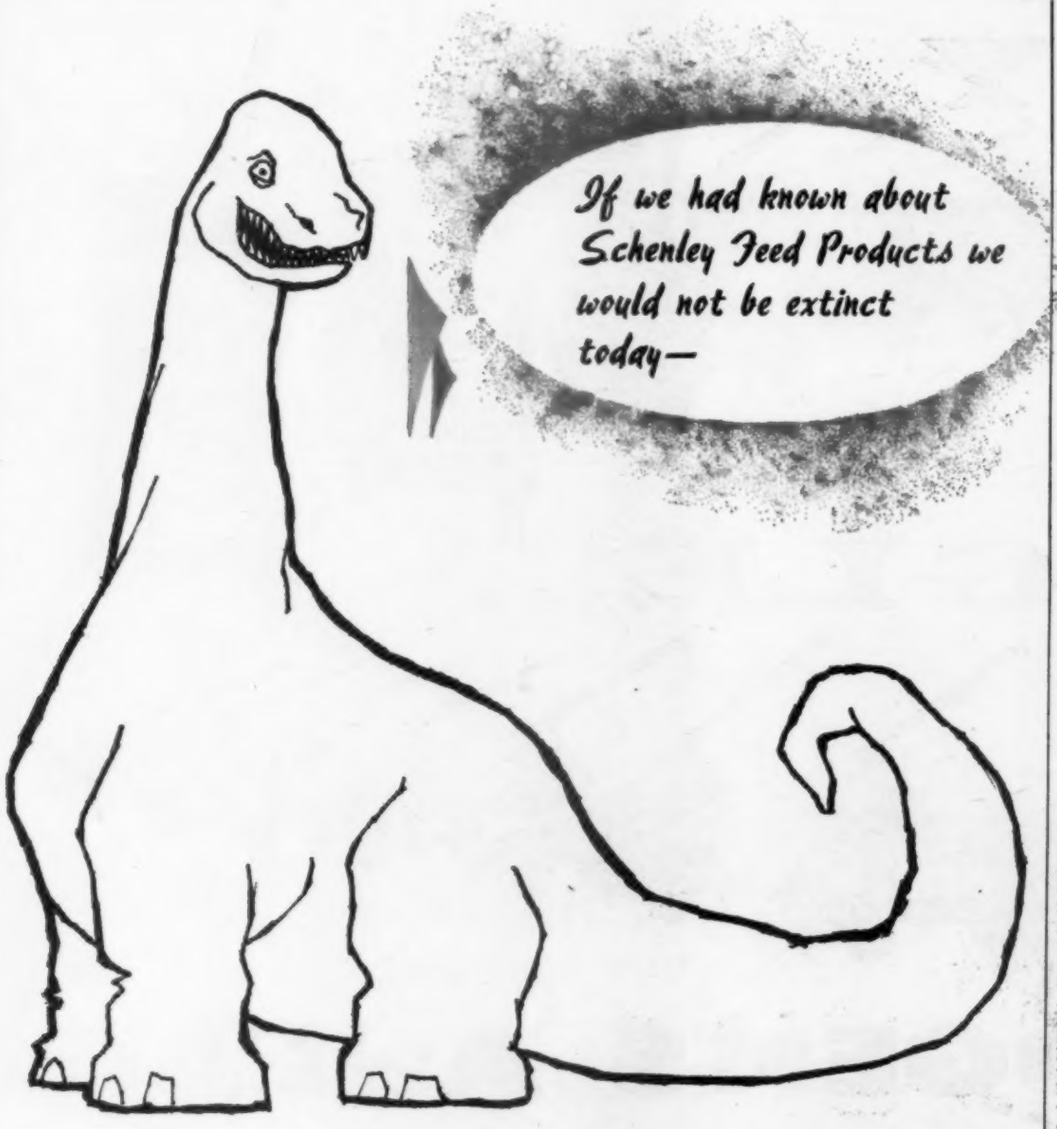
Ultra-Life Conducts Sales, Nutrition School

ST. LOUIS — Ultra - Life Laboratories, Inc., East St. Louis, Ill., recently conducted a feed sales and nutrition school for salesmen and servicemen at Corn Belt Mills, Inc., Gibson City, Ill.

Attendance includes (all representatives are from Illinois unless otherwise indicated):

Jim Mitchell, Hinckley; Russell Stickels, Ray Oglesby, Ernest Brown, Bob Heiser, Tom Francis and Noel Hutchcraft, all of Gibson City; Fred Belcher, Saybrook; Russell Neubauer, Ray Koerner, Leo Maubach and William Bohm, all of Pontiac.

Elvin Reynolds, Paxton; Charles Schmidt, Dixon; Fred Fultz, Joliet; Allan Wares, Chesterfield; Bill Ohrt, Kankakee; Cecil Melton and Bud Larimore, Delavan; Leonard Grate, Bushnell; Bill Graven, Sullivan; Arthur Shelts, Rushville; Wayne Eigenbrod, Mason City; Ken Getz, Morton; Glenn Zimmerman, Chatsworth, and Frank Wellinghoff, St. Louis, Mo.



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Minnesota Turkey Growers Warned on Production Hikes

MINNEAPOLIS—Industry experts attending the Minnesota Turkey Growers Assn. convention here warned that the industry is headed for trouble if intentions to raise 20% more birds this year are followed.

M. C. Small, executive secretary, National Turkey Federation, said raising 99 million birds would be bad for the grower but good for the consumer. He continued that there will probably be some change, but not enough since growers tend to think their neighbors will cut back and they won't need to do so.

More optimistic was Clem Thurnbeck, Forest Lake, Minn., grower and former NTF president. He predicts it will be possible to increase the per capita consumption of turkey and says the industry can sell turkey in Europe for less than it can be raised there.

Looking to longer range expansion, an increase of 62% in the next decade was predicted by Dr. Earl Butz, dean of agriculture at Purdue University and a member of former Secretary of Agriculture Benson's staff. He said this is attainable if leaders of the industry continue to apply sound management, market their product effectively and avoid restrictive "monkeyshines" that have fastened themselves on other sectors of the agricultural induustry.

Dr. Butz said he based his prediction on an expected 35% increase in per capita real income, lower selling prices from increased production efficiencies and "wise merchandising of a superior product."

He cited the fact that turkey production has quadrupled in 25 years. But, he warned that if the industry decides to accept production controls it is doubtful that any growth at all can be expected.

Turning to another problem of the industry, the growers plan to tighten up a voluntary control program this year in an effort to curb mounting disease losses. The tighter controls were prompted by heavy increases in number of birds condemned last fall with air sac disease, according to Dr. Ben S. Pomeroy, professor of veterinary medicine at the University of Minnesota and chairman of the association's breeder hen committee.

New president of the organization is Stanley Schewe, Sleepy Eye, Minn. Douglas McCully, Maple Plain, Minn., was named vice president and Dale Peterson, Cannon Falls, Minn., was reelected secretary-treasurer.

Roy C. Munson, St. Paul, was reappointed executive secretary.

Feeding Equipment Makers Set Records

MILWAUKEE — Bright spots in the current economic picture were the January reports of two Wisconsin feeding equipment firms.

James Manufacturing Co., Fort Atkinson manufacturer of barn and hog and poultry equipment, reported that January sales totaled more than a million dollars, the highest for the month in the firm's 55-year history and 26% above January, 1960.

C. A. Hanson, company president, said James plants were working on an overtime basis in some departments to keep up with the surge in sales and shipments.

Barn-O-Matic, Inc., New London, manufacturer of automatic feeding equipment, barn cleaners and silo unloaders, reported that new orders in January were four time greater than in the same month in 1960.

Gordon Carew, company president, said sales of a million dollars last year were the biggest in the firm's history.

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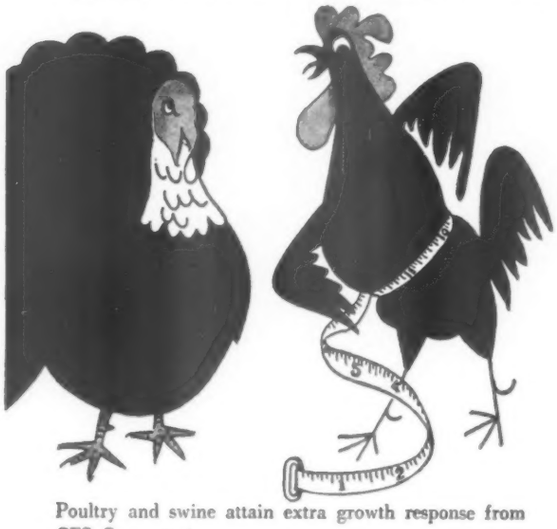

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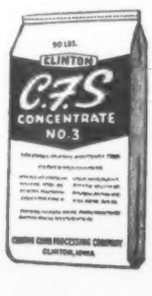

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BETTER HATCHABILITY (1000-egg basis)	CONTROL	TERRAMYCIN (50 gm/ton)
Hatchability,[1] %	84	89.7
Total hatchable eggs	633	660
Extra eggs	—	27
Additional egg income (27¢ ea.)	—	$7.29

[1] *of fertile eggs only*

MORE EGGS, MORE PROFIT		
Total eggs, laid (1000-bird basis)	76,294	80,662
Total salable eggs	67,254	72,674
Total cull eggs	9,040	7,988
Value of eggs sold (27¢ ea.)	$18,158.58	$19,621.98
Additional egg income	—	$1,463.00

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Lbs. feed/doz. eggs	18.6	16.0
Improvement	—	14%

And you get all these plus benefits

LOWER MORTALITY, FEWER CULLS		
Number of turkeys	2100	2075
Mortality, %	6.14	3.90
Culls, %	2.40	1.06

CHICKENS

BETTER PRODUCTION (1000-bird basis)	CONTROL	TERRAMYCIN Intermittent**
Total eggs	158,000	171,276

BETTER HATCHABILITY (of fertile eggs)		
Percent	78.1	87.3
Improvement, %	—	9.2

BETTER FEED EFFICIENCY		
Lbs. feed/dozen eggs	5.43	4.92
Improvement, %	—	10.3

EXTRA PROFIT (Eggs @ 60¢/dozen)		
Profit over feed cost dozen (Feed @ $85/ton)	36.9¢	39.1¢
Total profit over feed costs	$4,886.15	$5,580.74
Extra profit over feed costs	—	$694.59

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2. More eggs per pound of feed.
3. Improved fertility.
4. Better hatchability.
5. Greater chick and poult livability*.
6. Better eggshell quality.

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112. **Part 2: Extending Pellet Mill Die Life**—R. L. Patterson, Procter & Gamble Co. **20c**

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Poultry, Egg Men Hear Implications of Minimum Wage Law

KANSAS CITY—Poultry and egg men attending the Fact Finding Conference here had spelled out for them some of the questions which would be posed if Congress should extend the provisions of the minimum wage law to agricultural workers.

Speaking was Dr. Kenneth Hood, American Farm Bureau.

He told those attending the final session of the Institute of American Poultry Industries' three-day Fact Finding Conference that anyone employing 2,240 man hours per year would be included in the legislation as proposed.

"But this," Dr. Hood warned, "is not the whole answer.

"What about the man producing farm products on contract?" he asked. "Is the man producing for himself? Or is he an employee of the individual or firm with whom he has the contract?"

That question was raised in a court case in New Jersey.

An agricultural firm operating there was recently ordered by the New Jersey Supreme Court to pay a workman's compensation claim to a contract pullet grower. This grower was severely burned in December, 1957, when a brooder stove exploded. The chicks being brooded were owned by the firm. The Supreme Court reversed an earlier decision of the State Court of Appeals by a vote of 6 to 1.

"This is probably the first time," Dr. Hood said, "that a poultryman raising birds under contract has been ruled an employee of the contractor."

The U.S. District Court of Georgia set a precedent by ruling that poultry firm workers involved in mixing feed and servicing broilers owned by the company are exempt from federal minimum wage laws because of the close tie to agriculture.

A Lower Minimum

"But this decision would have no significance," Dr. Hood said, "if a minimum wage were established for agriculture unless the wage set for agriculture was less than the minimum wage set for other industries."

Farm wage rates, Dr. Hood stated, have risen steadily for many years and have continued to rise as farm incomes have declined.

According to the 1960 Economic Report of the President, production per man in agriculture, he said, has increased 89%, more than three times as fast as in the non-agricultural sector of the economy.

The Farm Bureau, says Dr. Hood, holds that in assuming authority over farm labor, the secretary of labor is usurping a legislative function.

Fixing of wages by the government at ever-increasing levels is harmful, he contended, both to the people it presumably wishes to help and to the general welfare.

"At any specified wage level," he said, "there are people who are not worth that wage to employers. As the fixed wage rises, the number made unemployable increases rapidly. As minimum wages are extended to new sections of the economy, the area within which the less skilled can find employment is narrowed.

"An increase in minimum wages or an extension of coverage would further stimulate the wage price inflationary spiral," he said, adding that this was one of the basic causes of depressed farm incomes.

"Under these conditions," he said, "farm costs will always rise faster than farm prices. The only way to increase real purchasing power of the economy is to increase productivity."

FDA PROJECTS GROWTH

DES MOINES—The Food and Drug Administration has projected its growth for a period from 1957 to 1966, forecasting about a six-fold budget increase from $6.8 million in 1957 to $44.2 million in 1966, according to the Animal Health Institute.

In outlining activities increases during the 10-year period, the agency emphasized in the field of research the stepping up of work on veterinary medicine. The possibility of "enlisting panels of leading experts" to work on questions of veterinary medicine was mentioned.

An AHI bulletin said that the 10-year projection made it clear that FDA wants a continuation and increase in industry self-policing. However, it would be accompanied by an increase in FDA's enforcement activities.

The six-fold increase in funds projected would take FDA from $24.9 million for fiscal year 1962, to $44.2 million in 1966.

The projection report would call for a four-fold increase in FDA personnel between 1957 and 1966 to 4,877.

The industry goal in the area of enforcement, the report said, "should be increased self-regulation with industry bearing the costs of whatever is necessary."

PENB Elects Research Advisory Chairman

CHICAGO—Dr. Lawrence E. Dawson, associate professor of food science, Michigan State University, was recently elected chairman of the Poultry & Egg National Board's technical research advisory committee for the year 1961. He succeeds Dr. Herbert S. Wilgus, vice president and director of research and nutrition of the Ray Ewing Co., Pasadena, Cal.

This committee provides counsel to PENB on programs dealing with the development of research projects and educational materials, according to Lloyd H. Geil, PENB general manager.

Dr. Dawson, who has written nearly 50 articles for poultry journals and extension bulletins, has been a member of the MSU staff since 1949. He is a member of the IAPI research council and a member of the Institute of Food Technologists.

He received his bachelor's and master's degrees from MSU and earned a Ph.D. degree at Purdue University.

Other members of the technical research advisory committee are Dr. Wilgus; Dr. Milton L. Scott, Cornell University poultry nutrition scientist; Dr. G. M. Briggs, department of health, education and welfare, National Institutes of Health, and Dr. Richard H. Forsythe, poultry husbandry department, Iowa State University.

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Lloyd C. Bacon

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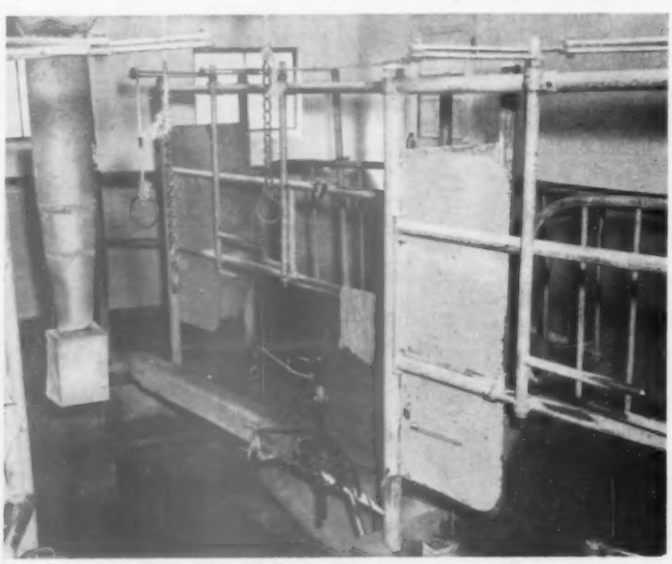
Bacon, looking over a part of his outstanding herd of Holsteins.



The milking parlor is a modern Surge plan, for a faster, easier milking operation. His feeding program is modern too, for efficient, high production. He mixes Scotch O Lass at the recommended level of 100 lb. per ton.

Dairyman Lloyd Bacon (left) and his feed dealer, Gene Allen of the Cameron Co-op, Cameron, Mo., look over some of the records of Bacon's top producing herd.

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Interpretations of Nutritional Literature

"I do not wish to cast any reflections on the many research jobs that have been well done. But the mistakes, errors in concepts and 'booby traps' that are still found should be called to the attention of all."

By Dr. H. J. Almquist
The Grange Co.
Modesto, Cal.

EDITOR'S NOTE: The accompanying article is from a presentation made at the California Animal Industry Conference. The author, Dr. Herman J. Almquist, is vice president and director of research for The Grange Co., Modesto, Cal.

A. REQUIREMENTS OF IDENTIFIED NUTRIENTS — The literature dealing with requirements for vitamins, minerals, trace elements, amino acids, etc., is now very extensive. A large part of it is concerned with measuring responses by the animal to varied levels of intake of nutrients. In my discussion I shall use as general terms R for response by the animal, which may include actual weight gain, rate of gain, bone ash, liver storage and other types of effects upon the animal which can be measured. I shall use N to represent nutrient, which may be a mineral, trace element, vitamin, amino acid, etc., and which is a known entity and can be controlled as to level of intake.

Now, as a very general rule, the relation of these two kinds of variables is found to be expressed as a "response curve" which looks about like Figure 1. Figure 1 is actually a plot of vitamin D intakes against chick bone ash, but it is also an example of the more general principle I am discussing. This is a curve which starts out in the lower regions of both Response and Nutrient as a curve which looks nearly straight, but which indicates decreasing R in reference to N in the higher regions.

The lower region of the curve is the zone which is usually easiest to analyze, the relation between R and N often being close to a straight line. So we find a large part of the nutritional literature representing work done in this suboptimal zone and concerned with nutrient assays, comparative activities of different forms of the same nutrient, interactions of nutrients with each other, etc.

This body of literature, while contributing greatly to general progress, does not help very much in the immediate problem of the practical nutritionist, who must decide how much of a nutrient is required for his animals to show maximal response. In these days of demanding the utmost performance from animals, the requirement for such performance has great economic significance.

As you have seen, the upper portion of the response is definitely a curve. Just looking at this curve gives very little basis for picking out any point to represent that which is the maximal economic response of the animal as well as the minimal nutrient intake required for that response.

I have encountered more than a few examples in which data were analyzed about as follows: Increments of R obtained in response to increments of N in the lower zone of the curve turn out to be what is called "significant" under usual statistical test. As the statistical analysis proceeds up the curve, a point is reached where R is no longer "significant."

Now the test of significance is based upon three factors: (1) the numbers of animals involved, (2) the deviations in R of these animals from the means of their groups, and (3) the magnitude of R. Where R is systematically decreasing, a point is reached where the statistical test indicates non-significance, but this may be primarily because of the **decrease** in R.

When this point is reached, the investigator often arrives at several fallacies in analysis: (1) that there is no real difference between the two upper levels of N in question, (2) that of the two levels of N the lower supports maximal effect, (3) that the lower level represents full requirement of the animal. These conclusions get into the nutritional literature and are accepted as facts.

Because of such non-critical thinking and adherence to conventional and presumably well-founded methods of analysis, the nutritional requirements of animals have frequently been subject to underestimation. I feel that blind application of formal statistical methods possibly has obscured as much information as proper application has clarified.

I do not decry the value of statistical methods. I have used them many times. The misuse comes in substituting them entirely for judgment, which the originators of the methods never intended. It seems that some workers do not attempt to extend their perceptions beyond the methods they have been taught. Some seem to feel that although their data may be sparse and erratic, an elaborate statistical treatment will make everything all right.

It is fortunate that a law can be applied to the upper curved portions of the response, by which much of the results in this zone can be clarified. This is the Law of Diminishing Returns. It is not a new law, but has actually been appreciated very little by nutritionists, except recently after a few of us have persistently pointed out the value of the law.

It is known to the economist. It is known to the chemist, who calls it the first order reaction rate law. The sales manager appreciates this law, for he knows that as he puts more salesmen into a given territory, he

FIGURE 1. An example of a response curve—in this case, a plot of vitamin D intakes against chick bone ash.

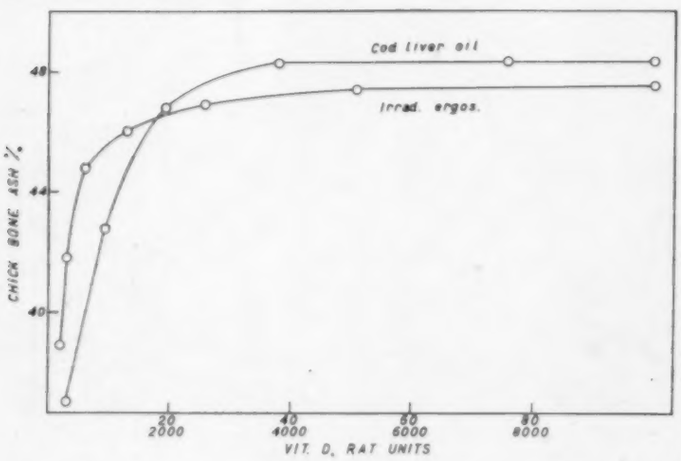


FIGURE 2. A logarithmic curve, showing the effect of vitamin A intake.

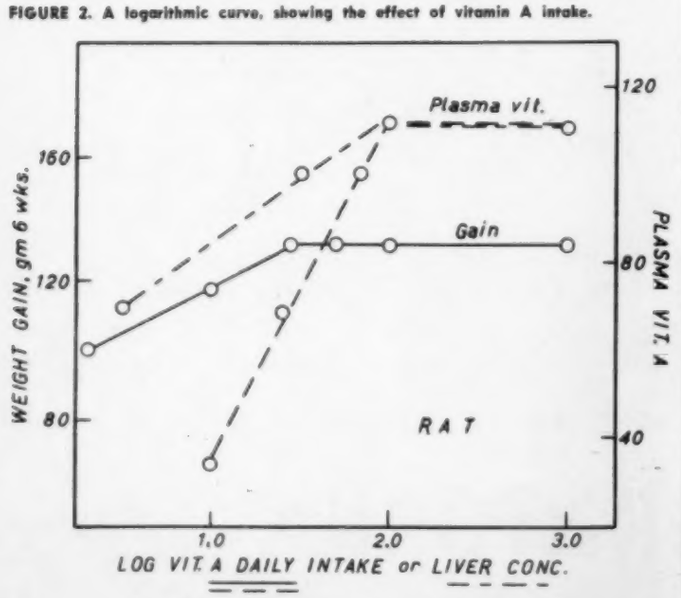


FIGURE 3. Relation of chick growth to concentrations of certain amino acids.

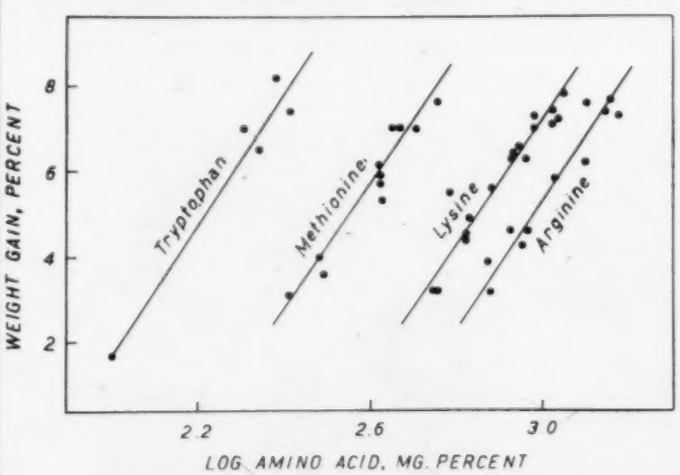
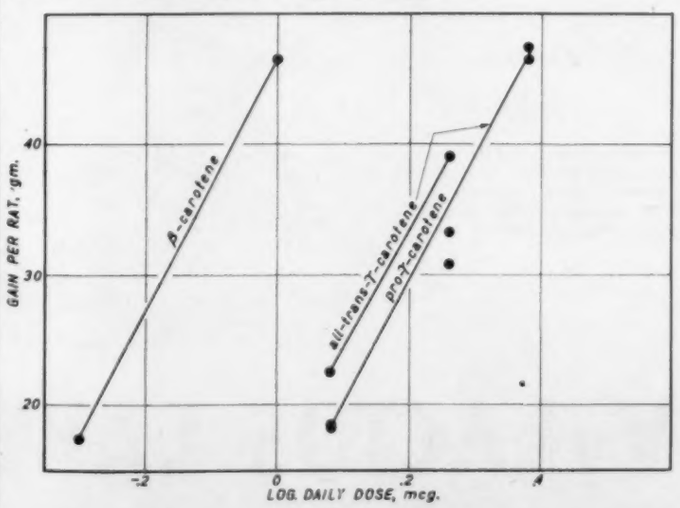


FIGURE 4. Rat gain in relation to intake of carotenes.



may get more total business but he begins to get less per salesman, because they begin to compete with each other. In other words, there is systematically less return per added unit of effort. The Law of Diminishing Returns is a very universal law.

A curve of regularly diminishing increment like this R curve is also known as a logarithmic curve. This is convenient, for by changing the plot to one of R versus the logarithm of N the curve will very often become a straight line up to a definite plateau of response, like Figure 2. This can be done either by using a logarithmic spaced plotting paper or by looking up the logarithm of the N values and plotting them on ordinary paper.

A log. plot which puts the relations on a Diminishing Returns basis has several advantages. (1) In the zone where R is responding to N all the data play a part in determining rate of response; and not just those data in the neighborhood of maximal response, which data often are too few for the purpose of pinpointing this maximal value. (2) The maximal response is usually readily seen from the intersection of the response and the plateau lines, although no actual data may fall on this intersection point. (3) Bad data are made more conspicuous because of their obvious lack of consistency with the others in the set. (4) Interesting relations among different forms of a nutrient are clearly brought out, as will be shown later.

I would comment here that by the use of such methods applied to data existing in the literature I have been able to derive further information not brought out in the original reports. In some cases I have found the animals coming up with one answer while the experimenters analyzing the results were coming up with some different answer. In some cases, I have found the animals doing a good consistent job, while the same could not be said for those reporting the experimental work.

I like Figure 2 because it was constructed from rat data published many years ago, but obviously of a high degree of consistency. It illustrates that the effect of vitamin A intake, not only on growth but also on blood and liver vitamin A content, follows the Diminishing Returns

FIGURE 5. Two forms of vitamin K cause blood clotting power responses that differ.

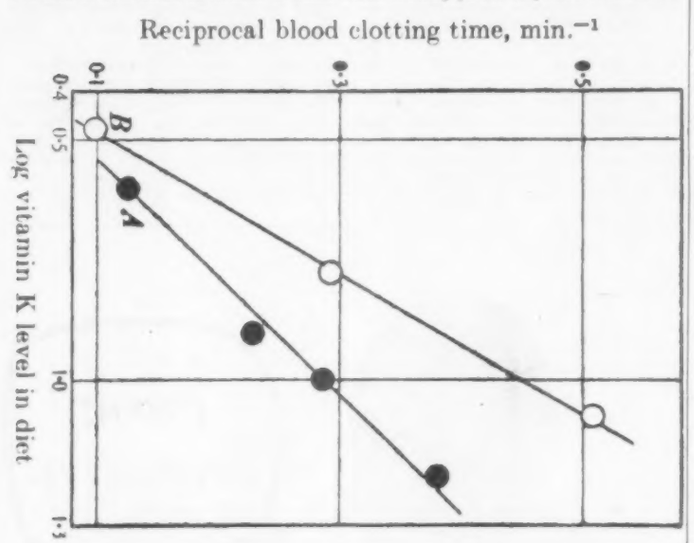


FIGURE 6. Effect of different forms of vitamin A on blood vitamin A in the turkey.

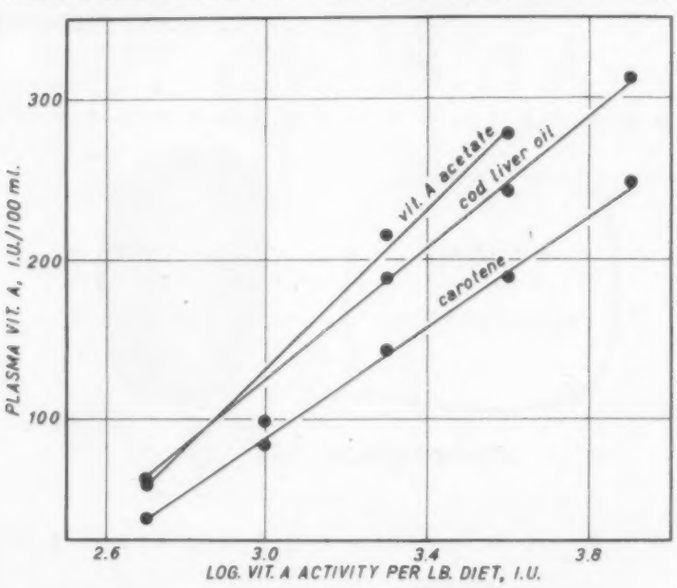


FIGURE 7. Effect of two sources of vitamin D on poult bone ash.

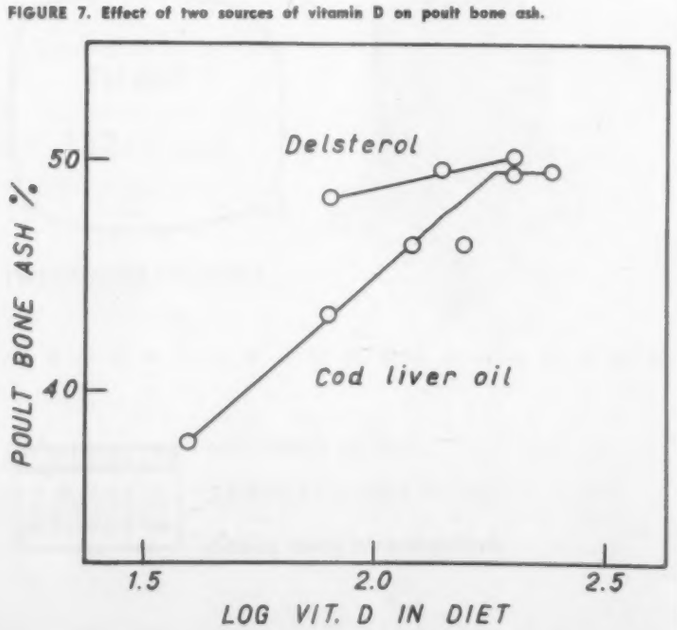


FIGURE 8. Responses of chick and pig to different arginine and lysine levels at different protein levels.

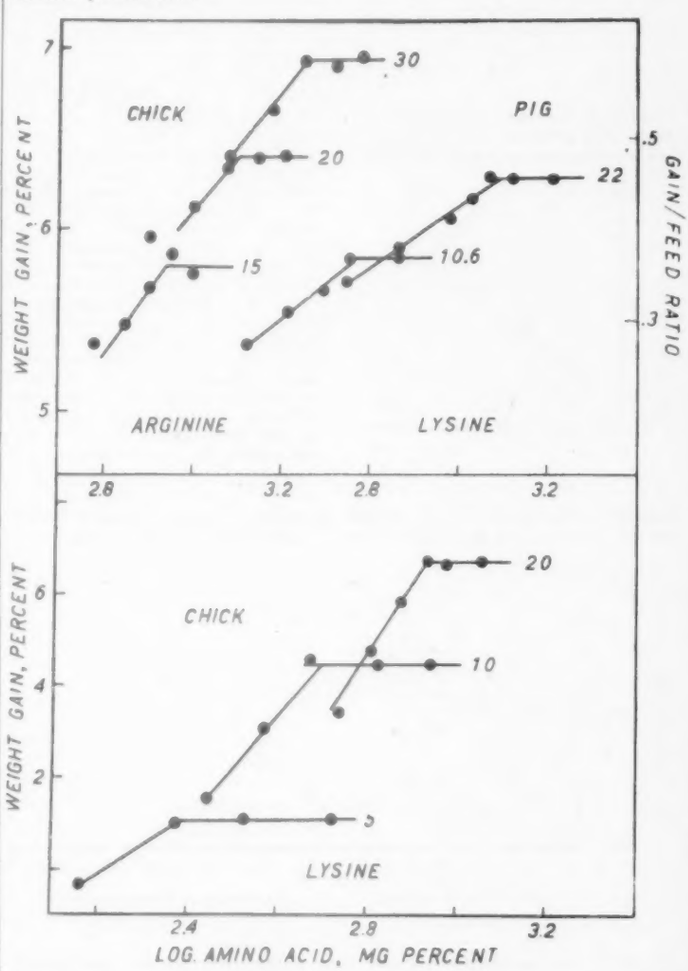
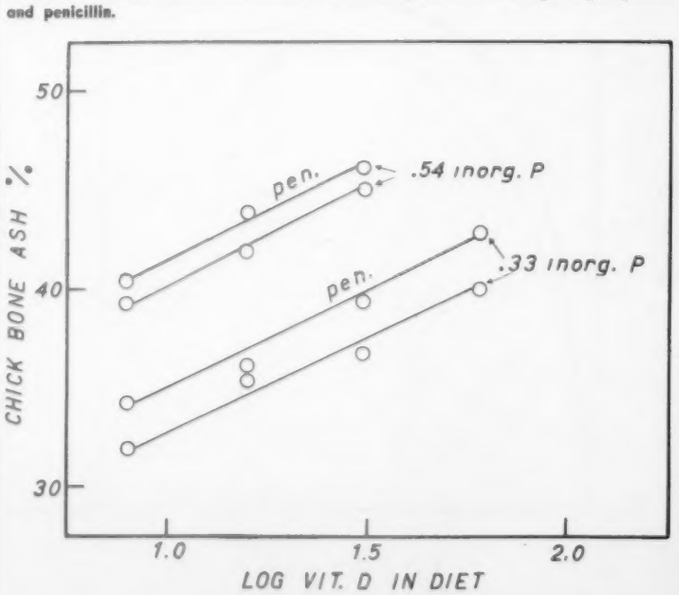


FIGURE 9. Calcification in the chick as affected by vitamin D, inorganic phosphorus and penicillin.



law, with well-established plateaus of response.

Figure 3 is another interesting example of this law. It shows the relation of chick growth to the concentrations of several essential amino acids in the diet. The fact that the curves are parallel shows that over a growth rate range of about 2 to 8% daily the required proportions of these amino acids to each other are constant.

Figure 4 shows rat gain in relation to intake of carotenes. The spacing between the curves is approximately the log. of 2, which means that over the range indicated the β-carotene was twice as potent as the γ-carotenes.

Figure 5 shows that this parallelism is not always a fact. Two forms of vitamin K cause blood clotting power responses that do not fall on parallel lines. This shows clearly that two forms of a vitamin may sometimes not have a constant ratio of potency to each other.

Figure 6 shows effect on blood vitamin A in the turkey of different forms fed. Here it is quite clear that the relations are not parallel and that there is no such thing as a really constant conversion factor of carotene to vitamin A, or of vitamin A in cod liver oil to vitamin A acetate.

Figure 7 shows how two sources of vitamin D fed in equivalent potencies on basis of chick test, gave much different response slopes when fed to turkeys.

Figure 8 shows growth responses of the chick to different arginine levels at 3 protein levels of 15, 20 and 30%. It is evident that a uniform relation held throughout, except that as each protein level became limiting the growth rate would plateau at that point. Another part of this figure shows a similar relation in the response of the pig to lysine at protein levels of 10.6 and 22%. A third shows similar relation of chick gain to lysine intake at three protein levels.

A common mistake, which now is appearing less frequently, has been to report amino acid requirement levels without reference to total protein level, despite the fact that for some years now it has been recognized that such requirements vary with the associated protein level.

Figure 9 shows an analysis of a study reported on calcification in the chick as affected by vitamin D, inorganic phosphorus and penicillin. Calcification was clearly best at the 0.54 level of inorganic phosphorus. At both inorganic phosphorus levels, the addition of penicillin antibiotic increased the efficiency or absorption of vitamin D so that less was needed for the same chick bone ash or degree of calcification. The response curves remained parallel showing that the Law of Diminishing Returns was being obeyed in the same general way throughout.

As a practical consequence of this law, it follows that to push an animal to the last degree of response, relatively larger amounts of the nutrient will be required as compared to a response farther down the curve.

FIGURE 10. The relation of turkey hen weight at 26 weeks to the product of protein intake and non-protein calorie intake.

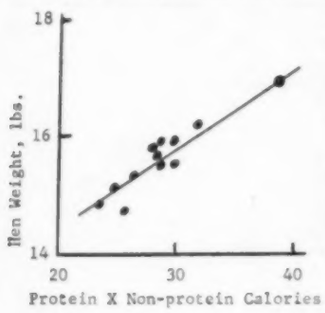


FIGURE 11. The relation of feed efficiency of growing turkeys to product of protein and total calories, and to product of protein and non-protein calorie intake.

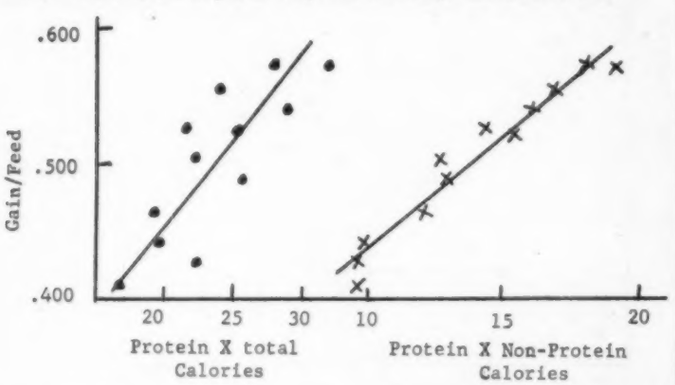
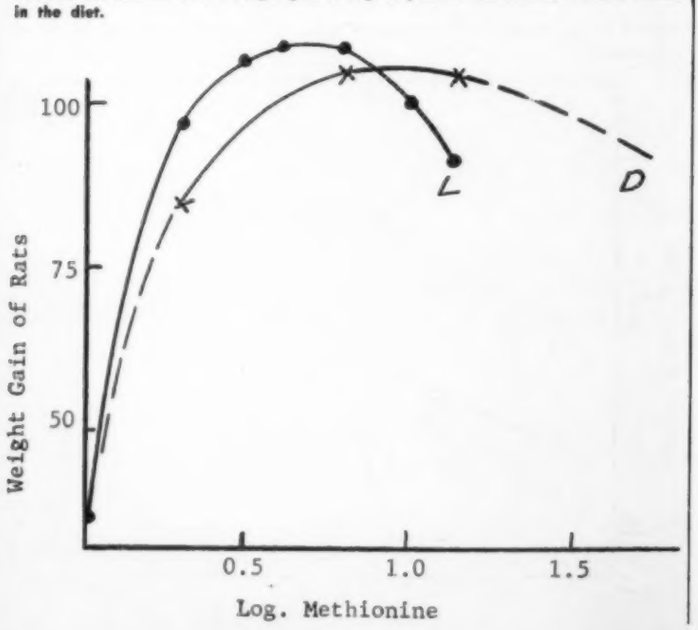


FIGURE 12. Relation of rat weight gain to log. of percent methionine, L and D forms, in the diet.

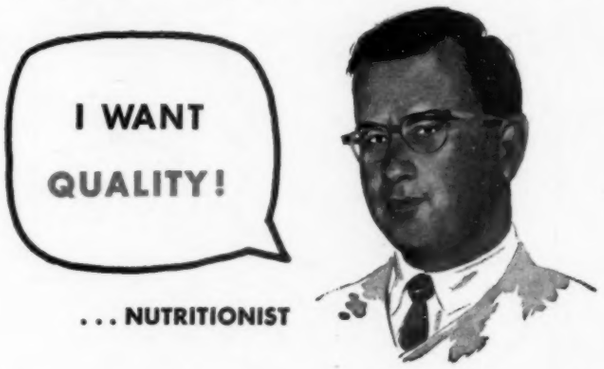


B. CALORY-PROTEIN RELATIONS — The next general topic I wish to discuss is that of calory and protein relations. In recent years, there has been much mention of the "calory-protein ratio." This expression is the total nutritional caloric value of the diet divided by the protein content of the diet. The ratio has been assigned certain values in an optimal range for high efficiency diets for broilers, etc., and does have some utility as an empirical "rule-of-thumb."

To have wide usefulness, a rule must be based upon technically sound concepts. The calory-protein ratio, being a ratio, is independent of actual calory and protein intakes, and it is the latter that the animal grows upon. Consequently, the ratio is a disembodied number that has definite relation to growth results only when the calory or the protein intake, or both, are controlled in one way or another.

The caloric value of the protein in the diet is included in the total caloric term, which is the numerator of the calory-protein ratio, while the percentage of protein in the diet forms the denominator. This arrangement implies that the protein at one and the same time furnishes its full potential of energy and also furnishes its full complement of structural material to build tissues. Actually, protein can do only one or the other of these, and that part of the protein which is diverted into one function is lost so far as the other is concerned.

On examination of the calory-pro-



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tein ratio, it may be seen that there are actually two parts, as follows:

$$\text{Calory-protein ratio} = \frac{\text{Total calories}}{\text{Per cent protein}} = \frac{\text{Protein calories}}{\text{Per cent protein}} + \frac{\text{Non-protein calories}}{\text{Per cent protein}}$$

The first half of the ratio turns out to be a constant, while the second half represents the variable part that apparently may be related to growth results under closely defined circumstances. Obviously, a change in the percentage protein can cause a wide change in the ratio by displacing non-protein, thereby affecting the numerator and denominator at the same time and in opposite directions. Because of this arithmetical difficulty, it is possible to have a series of diets with a wide range of ratios but yielding essentially the same growth results. This is attributable to the fact that surplus protein can be converted to calories and the caloric value of such converted protein is about equivalent to that of the same amount of carbohydrate.

The writer encountered difficulties due to such fallacies as mentioned above in attempting to correlate growth of turkeys with calory-protein ratio. For example, a flock of young turkey hens was raised upon a series of diets representing controlled variations of intake of calories and protein. Correlation of results with the calory-protein ratio was practically non-existent, and a search was made for some other more basic relations among the data.

Fundamentally, non-protein caloric sources have a "sparing-action" upon protein in that they reduce the necessity of burning up the protein. Since caloric demand is pre-eminent for survival, the animal will generate the necessary calories from any sort of fuel available to it. Therefore, with a controlled intake of protein, a direct relation should be observed between growth and non-protein caloric intake. With a controlled intake of calories a direct relation between growth and protein intake should exist. Certainly, growth could by no means be expected to vary consistently in relation to a reciprocal of the protein, as expressed in the calory-protein ratio. As a means of including both protein and total calories in one expression, the product of the intakes of each was studied in reference to the growth results. It was at once apparent that a strong correlation did exist. However, the protein appears in this product actually as a quadratic term and therefore has too much influence.

A further refinement was attempted by removing from the total caloric term the calories attributed to the protein. Using existing data on composition of materials such as blood meal, casein, fish meal, meat scrap, etc., the caloric value of the protein contained in each was calculated and found to be consistently in the range of 1,200 to 1,300 calories of productive energy per pound of protein. Quality of the mixed protein in a well-balanced diet cannot be related to origin of protein because of mutual supplementary actions among the proteins. A single factor to express the caloric value of the mixed protein in such a diet is fully permissible. An average value of the factor was taken as 1,250. The caloric value of diet protein arrived at in this way has no basic utility, except that in using existing data on productive energy of poultry feedstuffs, which have been most commonly employed by most investigators, the factor makes possible an estimation of the non-protein caloric value of the diet.

Having this further step completed, it was then found that the correlation of growth results with the product of the protein and the non-protein caloric intakes in respective diets was significantly improved over the first case in which the product of the protein and the total caloric intake was used. (Fig. 10.) This improvement indicated that a more nearly correct relation of these nutritional factors had been employed. Actually, the removal of all calories attributable to protein represents an over-correction to some degree because some protein is always burned in the fires of metabolism. Most careful metabolic studies of balances, excretion, tissue and energy output would be required if this question were to be studied in detail.

The above observations on the relations of product of protein intake and non-protein caloric intake to growth results were applied to existing data on chickens, turkeys and rats and many cases of excellent correlations were found. (Fig. 11.) In Figure 11 is shown a similar treatment of data on young turkeys. A fair degree of correlation exists between feed efficiency and product of protein and total calories. However, when the protein calories are taken out of total calories, as on the right side of the figure, the correlation is much improved.

As mentioned above, the computations were based upon the productive energy values of feed because these have been most commonly employed. It seems that "metabolizable energy" values may replace the former in most applications, but this probability does not alter the basic concepts involved.

I do not propose that a series of "products" would now be adopted to guide feed formulation. My main purpose in this discussion of protein and calories is to show how apparent chaos will clear away when a more basic approach is made and the system and order of nature have opportunity to show through.

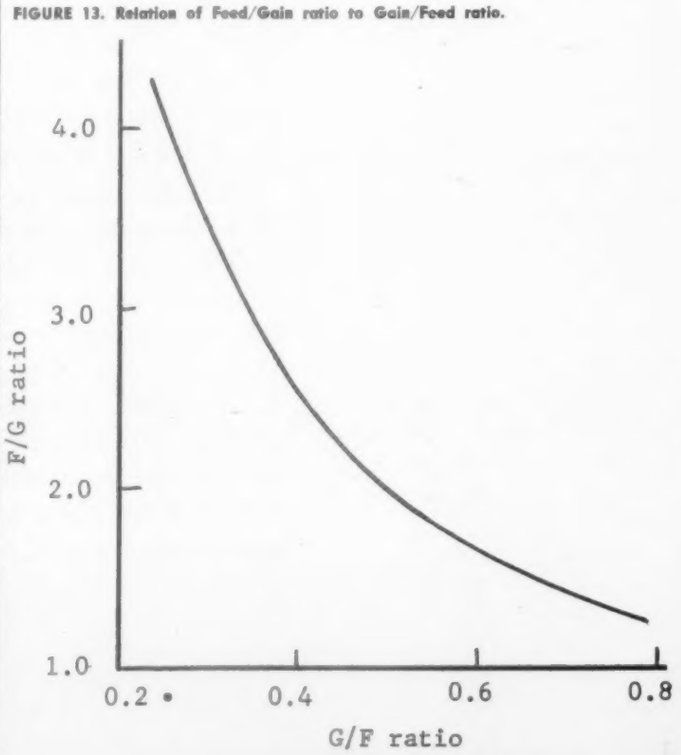
C. INCOMPLETENESS OF MANY RESEARCH STUDIES — In some ways it is unfortunate that so much research is carried out actually by students, under the direction of some senior member of the institution. Obviously much of the research is of a student problem nature, frequently incomplete. It is published anyway because the student graduates and moves on and will not have time to finish the job.

As one example of incompleteness, I offer Figure 12 on relation of L and D forms of methionine to weight gains of rats. Enough data were obtained with the L form to define a response curve fairly well. Only three points were obtained with the D form. Since two of these appeared up near the top of the L response it was concluded that the D form was just as efficient as the L form.

I submit that a different interpretation could be made. A construction of a probable D response curve including all three D points is indicated on the figure. The dashes indicate probable extensions of the D curve. I will bet a thorough study would have found such a curve. Why the L curve

(Turn to page 64)

FIGURE 13. Relation of Feed/Gain ratio to Gain/Feed ratio.



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...says Monroe Babcock, President,

Monroe C. Babcock
President
Babcock Poultry Farm, Inc.

Telling of this experiment, Mr. Babcock reports, "During the first five months of full production our layers needed only 2¼ pounds of feed per pound of eggs produced (3½ lbs. of feed per dozen).

"The proper level of methionine in the diet of high-producing layers makes a big difference in performance, particularly during the peak of production. In a recent experiment we found the addition of 2 to 2½ pounds of 'Hydan' per ton of caged-layer ration resulted in 11¢ to 28¢ more profit per bird during the *first five full months of lay.*

"Representatives of the Du Pont Company approached us last summer with information indicating that a high-producing bird such as our Babcock layer is capable of producing a pound of eggs on less than 2½ pounds of practical ration...*if* the level of methionine in the diet is adequate.

"An arrangement was made with Dr. M. L. Scott, an authority on Poultry Nutrition, to design and supervise an experiment with methionine as a variable and coordinate with Du Pont Company and Dr. Hill of the Babcock Poultry Farm." In describing this experiment, Mr. Babcock says, "The hens used in this experiment were typical Babcock layers of the same background and housed in one of our commercial laying buildings. The experimental diets were fed as the only ration from the start of production, as is done in commercial practice.

"The test was started in July, and the results are cumulative from mid-August through mid-January. Egg size was normal, being 53-54 grams per egg at the start and about 62 grams per egg at the finish. Eggshell quality was uniformly excellent. In all respects the conditions of this experiment simulated commercial practice; therefore, the results are of special value. This experiment demonstrates the type of cooperation between geneticists, nutritionists and industry that makes for continuous agricultural progress."

From left to right: **Dr. Jack Hill,** *Director of Research at the Babcock Farm,* **Dr. M. L. Scott,** *an authority on poultry nutrition, and* **R. B. Bishop** *of the Du Pont Company coordinate test data in the Babcock Farm reception room.*

3½ pounds of feed per dozen feed supplement in ration"

Babcock Poultry Farm, Inc.

Summary of experiment

Four hundred thirty-two Babcock pullets were randomly distributed on the basis of body weight into 8 rows of double cages at about 2 weeks prior to the onset of egg production. The experimental diets were mixed under Dr. Scott's supervision and consisted of two practical high-efficiency formulas both with and without the methionine supplementation calculated to be necessary for maximum feed efficiency. Egg size and body weight were checked at the beginning and end of the experiment. Feed consumption and egg production were recorded at 30-day intervals. Although the test period included the cold-weather months of December and January, one diet supported a five-month daily average of 9.0 pounds eggs per 100 hens on an average feed consumption of 20.0 pounds feed per 100 hens daily. *This performance was equivalent to 2¼ pounds of feed per pound of eggs, or 3½ pounds of feed per dozen eggs for the five-month period.* With both control diets, the addition of "Hydan" increased production rate and improved feed conversion about 10%.

For more information on "Hydan" Feed Supplement write E. I. du Pont de Nemours & Co. (Inc.), Industrial & Biochemicals Dept., Wilmington 98, Del.

For layers

Methionine is present in egg protein at more than twice the concentration of natural methionine in typical feed protein. With the economic importance of maximum feed efficiency as the basis for profitable egg production, "Hydan" has become an important ingredient for increasing the efficiency of feed protein. Feed rations containing "Hydan" for high-producing hens can also increase production and improve feathering. Likewise, "Hydan" in a ration for breeding hens helps maintain good fertility and hatchability.

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comes down beyond the peak, I do not know, but I suspect amino acid imbalance which is often seen to cause this effect. At any rate, the D curve could well have been displaced to the right, and if this were a fact, the D form would have been less and less potent relative to the L form as the intakes were increased. This situation seems much more probable, and I cannot accept the conclusions of the authors that the two forms were of equal value for growth promotion.

D. OTHER ERRORS AND FALLACIES — Another type of error in analysis of data I have found lies in the indiscriminate use of ratio of feed to gain, F/G (usually called the feed conversion) and the reciprocal of this, G/F (usually called the feed efficiency). The feeling seems to be that since one is merely the other upside down, it makes no difference which is used.

In Figure 13 I show you a plot of F/G against G/F using the same data. It is obvious that there is not a straight line relation between the two, and that a variable which might be linearly related to F/G could not be so related to G/F, or vice versa. In attempts to analyze data closely this is a possible error that all should recognize, but it seems not, sometimes. Usually, the G/F ratio works out best in relation to nutrient variations.

I would add the comment that in some cases where weight data were made the basis of decision, I have found the F/G or G/F ratios much more consistent and leading to somewhat different conclusions than those stated in the reports.

Not infrequently we see such extremes as reporting a result out to 4 or 5 integer places when even the first integer might be a matter of doubt. For example, a statement such as this, "The glutamic acid requirement of the chicks was 15.77%." Here, perhaps, only the first integer is accurate.

I have seen such examples as a nice looking completely filled out table of data which on close second look turned out to have less than 25% original data, some of which were copied into the wrong column, the rest being estimated values. From this table many conclusions were drawn.

I could mention in detail more than one study on unidentified growth factors in which the basal diet was not certainly adequate in all known required factors, hence, the crude products tested could have actually been correcting a deficiency not supposed to be influencing the results.

Space does not permit mention of a dozen other types of malfunction in the analysis of data.

This discussion may have seemed hypercritical. I do not wish to cast any reflections on the many, many research jobs that have been well done. On the other hand, I think it is about time that the mistakes, errors in concepts, "booby traps," etc., that are still found, should be called to the attention of all.

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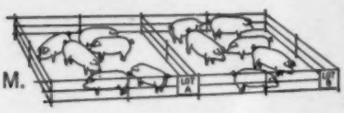

BY SPENCER H. MORRISON, PH.D., D. V. M.

Barley in a Non-Roughage Ration for Fattening Steers

● T. B. Keith, et al., Idaho Agricultural Research Progress Report No. 48, January, 1961.

ABSTRACT

A cooperative project was set up by the Idaho Caldwell Branch Station and the Idaho Cattle Feeders Assn. to investigate barley and dried molasses beet pulp in various combinations in "all concentrate" rations for fattening steers in comparison with a "conventional" corn silage and alfalfa hay roughage ration fed along with 2 lb. of concentrate per 100 lb. liveweight. Diethylstilbestrol was included in the feed mixtures at sufficient level to allow approximately 10 mg. per steer per day. Sixty feeders weighing an average of approximately 760 lb. initially were divided into six groups and fed one of the rations indicated in Table 1.

The steers in Lot 1 were fed all the roughage they would eat and this ration which had been one of the better fattening rations according to a previous feeding test, was used as the control ration. The roughage was composed of three parts of corn silage and two parts of alfalfa hay. The steers in the remaining lots were fed this roughage mixture during the first two weeks of the trial and the concentrate-mixture allowances were increased each day so that at the end of the two week period, their rations did not contain any roughage such as alfalfa hay or corn silage.

The steers were weighed each 28 days during the 140 day trial and the average daily gains for the lots in order were, respectively: 2.25; 2.51; 2.55; 2.76; 2.69, and 2.78. For a significant difference at the 5% level of probability a difference of 0.19 lb. average daily gain was required. The corresponding feed efficiencies per 100 lb. of gain were, respectively: 1200 lb.; 996 lb.; 798 lb.; 760 lb.; 806 lb., and 816 lb. Using the prices current at the time of the trial (June 21 to Nov. 8, 1960) the total costs per 100 lb. of gain were, respectively: $21.63; 23.67; 22.53; 17.44; 17.93, and 17.83.

Although the slaughter data secured in this experiment have not as yet been subjected to statistical analysis, it is doubtful whether the various rations actually affected the carcass grade or value.

COMMENT

Currently, much interest is being shown in so-called "hot" or all-concentrate rations for fattening beef animals. Actually, close examination of many of the rations being currently tested, shows that a considerable amount of "roughage" is present in these rations. This is because liberal use is being made often of the more fibrous grains such as barley or oats, or else resorting to beet pulp which itself contains appreciable amounts of fiber. Physical form of the grains apparently will affect results in the opinion of many workers. For example, a commercial feedlot in North Dakota recently compared all-concentrate rations based largely on barley which was either steam-rolled or dry rolled. The average daily gains during an 85 day feeding period were 2.40 lb. for steam-rolled versus 2.26 lb. for dry rolled. But, in California, another feedlot compared steam-rolled with crimped barley. In this case the steam-rolled performed only very slightly better and as a result the crimped barley rations were slightly cheaper. Strong of the University of California (1961) summarized four "all-barley" practical trials in comparison with standard fattening rations and the findings as noted in Table 2.

TABLE 1. Rations Fed Six Groups of Steers

	Lots					
	1	2	3	4	5	6
Barley, steamed-rolled	930	....	1,920	1,600	1,300	1,600
Corn cob meal, ground	....	1,175	....	....	....	....
Dried molasses beet pulp	460	600	....	300	600	860
Oats, ground	460	....	....	....	....	....
Cottonseed oil meal	100	275	80	50	50	90
Sodium chloride	20	20	20	20	20	20
Dicalcium phosphate	30	30	30	30	30	30
Diethylstilbestrol, gm./ton	1.3	1	1	1	1	1
Vitamin A concentrate, thousands I.U./ton	1,500	1,500	1,500	1,500	1,500	1,500
Per cent protein	12.3	12.6	12.6	12.9	12.4	12.6

Ration Balance

It is equally obvious that when "no roughage" is fed in the conventional sense, particular attention must be paid to careful balancing of the ration with the right amount of protein, minerals and vitamins. Failure to do so may lead to disastrous results compared with the more conventional methods. In other words, the conventional roughage based rations, offer some degree of "insurance" against possible trouble for the average feeder.

Some of the disadvantages of "all-concentrate" rations are bloat and odor. Bloat can largely be avoided if sufficient time (probably about two weeks) is taken to change over the feeder cattle. Once cattle are on such rations it is absolutely necessary to make sure that they have feed avail-

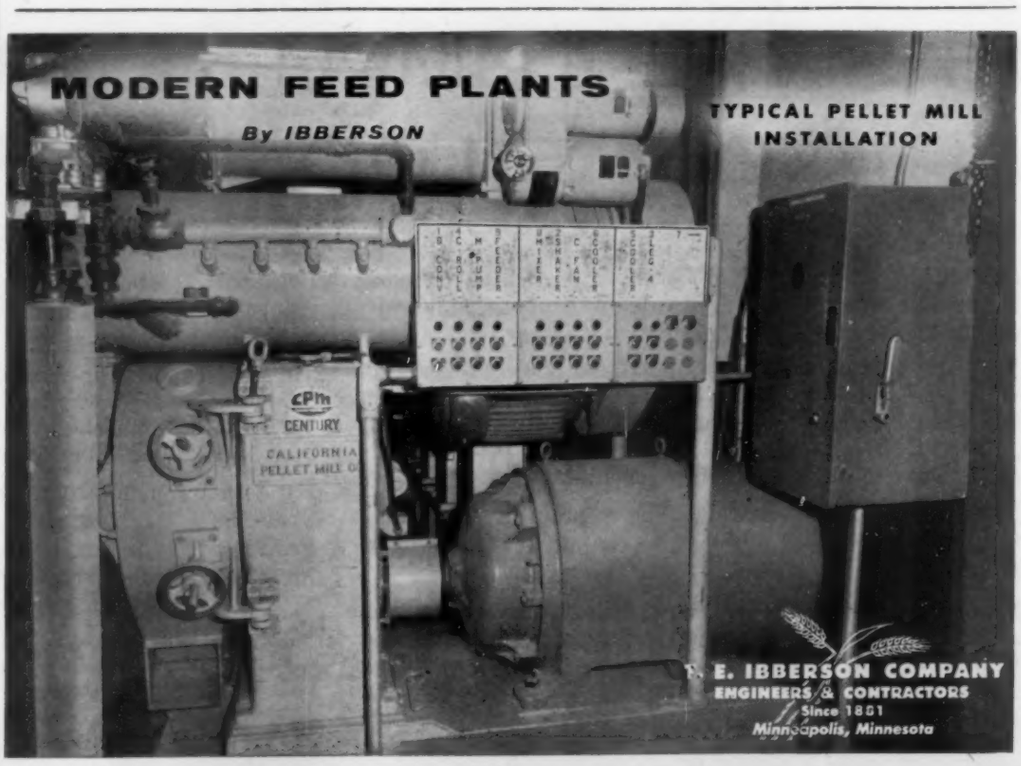

TABLE 2. Comparison of All-Barley Trials with Standard Fattening Rations

	Control	All-concentrate
Number of head	276	425
Days on feed	113	113
Initial weight	677	684
Average daily gain	2.74	2.85
Feed per lb. gain	8.90	7.40
Dressing, %	60.85	62.14

able at all times, otherwise, many animals will founder. Odor problems definitely increase when high-concentrate diets are fed. This may become a problem in certain feedyards located close to centers of population. Use of sorghum or corn seems to increase the odor more than barley or oats.

All-concentrate feeding is growing rapidly in all sections of the country and space does not permit a complete review of the numerous recent reports on this subject (Georgia, 1960; Alabama, 1960; Iowa, 1960; Colorado, 1960; North Carolina, 1960; Penn State, 1960, etc.). Considerable interest is also being shown in the use of sodium and potassium salts as additives to such diets based upon the work recently reported by USDA (Ithaca, N.Y.) and North Carolina (1959) workers using synthetic diets for ruminants.

Advantages

The use of these rations obviously has many advantages in highly mechanized large-scale feedlot operations since they are easily adapted to automation and offer less storage problems. The decision of whether to use them in such operations is largely one of economics—the price of grain available in relation to the roughage supply.

In arriving at the correct decision one must also consider that the all concentrate rations will likely produce slightly better gains, better feed conversion and possibly slightly higher dressing percentages than most conventional rations.

Whether such rations are adapted to smaller operations, especially those in the Midwest, may be somewhat questionable in view of results with corn-based high concentrate rations in the hands of the Iowa researchers (1960). The conventional ration of ground shelled corn, alfalfa hay and supplement performed quite a bit better in all respects than did any of the four high-concentrate rations investigated. It is the opinion of practical operators who have used high sorghum or corn rations that benefits from these two ingredients in high concentrate rations may not be as striking as when barley or oats are used.

One interesting observation should also be noted from the Idaho work reported above in the abstract. The fact that the animals on beet pulp rations did better than those not including this ingredient is worthy of further investigation. It has been known for some period of time that the fiber in beet pulp is highly digestible, being approximately 80%, compared with that of barley of approximately 56%. From this data, it is obvious that the beet pulp rations used were not as high in fiber as is at first indicated by the crude fiber contents.

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Says Supermarkets Prefer Eggs from Mechanized Operations

CHICAGO—Waldo Haldeman, head of Acme Stores' egg, butter and cheese department, reported recently in the Poultry Automation News that supermarkets prefer to buy eggs from highly mechanized operations.

Mr. Haldeman, who supervises egg purchases in 842 supermarkets with gross yearly sales of better than $1 billion, said, "Large retail outlets such as Acme have found that it is not economically feasible to deal with growers who cannot provide at least 50 cases of eggs per week.

"We have discovered that the larger farmer with an efficient mechanized operation is our most dependable source of both quality and quantity."

Mr. Haldeman reported that "one Acme supplier in north Jersey raises as high as 250,000 layers at a clip. This type of operator makes poultry farming a science. They have the egg cooling and handling equipment necessary to insure a top grade product."

Mr. Haldeman believes poultrymen are becoming more quality conscious and striving to produce a "better dozen."

Product Improvement

"At one time, quality fell so sharply throughout the East that we were forced to seek additional sources in the Midwest and South," said Mr. Haldeman. "That's changed now. Poultrymen have come to realize that nearness to market doesn't give them the advantage that it once did. So they are knuckling down to improve their product."

Acme recently initiated a policy of paying its suppliers on a five day average based on Urner-Barry prices. The daily prices for the preceding Monday through Friday are added and then divided by five. This yields the weekly average.

Mr. Haldeman believes the grower gets a more stable price for his eggs under this system and is able to plan his operation more efficiently. This average payment system is now being used on a trial basis and will be continued if it meets with the endorsement of suppliers, it was reported.

Dr. Yacowitz Opens Feed Consulting Firm

BOUND BROOK, N.J. — A new consulting service for the feed industry and allied groups is being opened here by Dr. Hal Yacowitz.

Dr. Hal Yacowitz

Dr. Yacowitz received his Ph.D. degree in animal nutrition from Cornell University and his background includes work as a research biochemist, associate professor of poultry nutrition at Ohio State University and head of the nutrition research department at E. R. Squibb & Sons, according to the announcement of the new firm's opening. Dr. Yacowitz holds several patents and has published more than 40 technical articles in the field of nutrition and animal diseases.

The new consulting service will include: Feed formulation for poultry and livestock, feed labeling, preparation of technical advertising, sales training in nutrition, field testing of new feeds and additives and handling Food and Drug Administration problems, the announcement said.

Dr. Yacowitz's office and laboratory will be located at 221 Second Ave. here.

Dr. Yacowitz left Nopco Chemical Co., Harrison, N.J., where he was director of applied research to begin the new consulting service.

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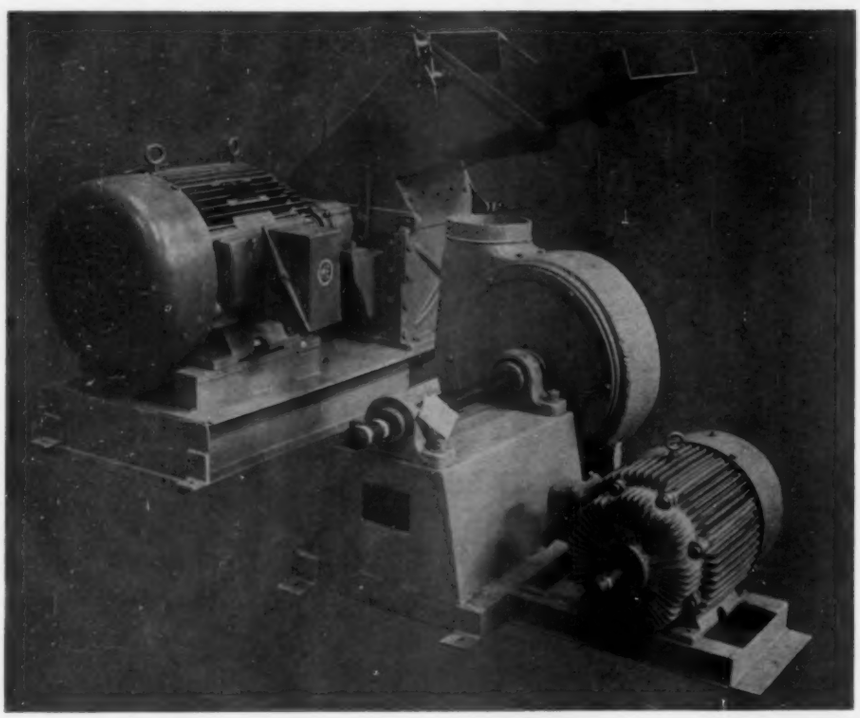

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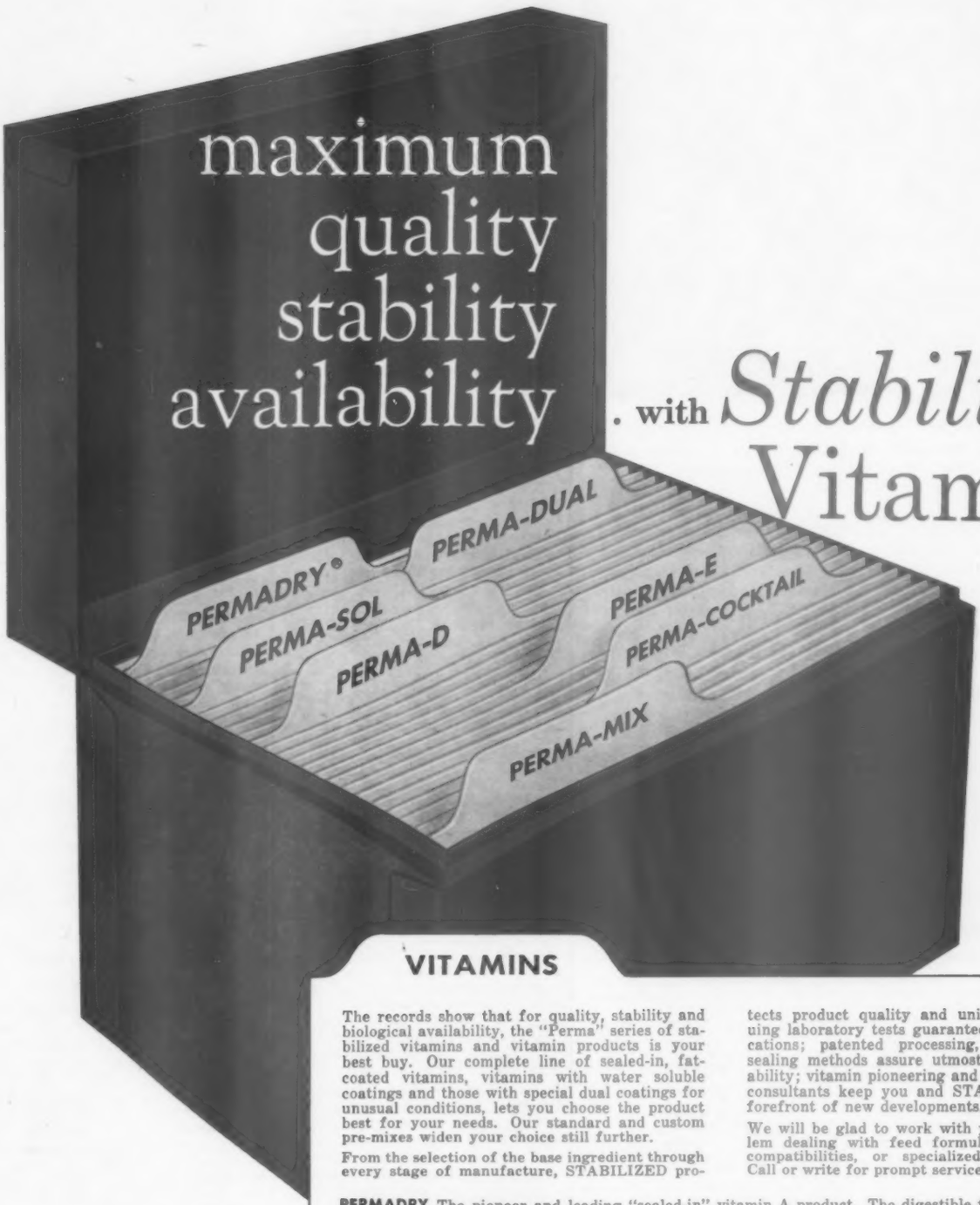

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FEEDSTUFFS
LEADER IN THE FIELD

Clemson College Poultry Short Course Set for March 1-2

CLEMSON, S.C.—The department of poultry at Clemson College has announced the date for the fifth annual Poultry Health and Management Short Course at Clemson as March 1-2, 1961.

According to Dr. B. D. Barnett, head of the poultry department, speakers from both industrial and educational institutions from all over the eastern U.S. have been scheduled to appear for the meeting which will be held in the Clemson House.

Featured on the first day's program will be Monroe Babcock, president of Babcock Poultry Farm, Inc., of Ithaca, N.Y. His speech is entitled, "How Birds Should Be Managed—What the Serviceman, Hatcheryman and Pathologist Can Do to Help the Poultryman." Mr. Babcock is also scheduled to speak on Thursday afternoon on the topic, "Where the Poultry Industry Is Right Now, and Its Future Possibilities."

Also on the program will be Dr. Donald E. Davis, assistant professor in the department of veterinary microbiology and preventive medicine at the University of Georgia, who will speak on "Management vs. Disease."

Dr. Eugene B. Patterson, research and development nutritionist with Charles Pfizer & Co., Inc., of Terre Haute, Ind., will discuss "Stress and Poultry Production."

Thursday's activities will be highlighted by a panel discussion of "Coccidiosis Control," with Dr. M. E. Reid of the poultry department at the University of Georgia, as moderator.

Other speakers on the program include Dr. Dale J. Richey, from the Poultry Disease Research Center at the University of Georgia; Dr. Emilio C. Mora from the department of poultry husbandry at Auburn; Dr. W. J. Gross, department of veterinary science at Virginia Polytechnic Institute; Leon M. Bloom, of Bio-Lab, Inc., Decatur, Ga.; L. W. Cassel, director of practical research, Whitmoyer Laboratories, Inc., Myerstown, Pa.; and Dr. G. D. Cloyd of Hess & Clark, Inc., Ashland, Ohio.

Also, Dr. Don Cummings, Dr. Salsbury's Laboratories, Atlanta, Ga.; Dr. L. C. Harold, Food & Drug Administration, Washington, D.C.; Dr. T. A. Hymas, Dow Chemical Co., Midland, Mich.; Dr. R. F. Miller, Merck & Co., Rahway, N.J.; Dr. Wm. H. Rhodes, Merck & Co., Columbia, S.C.; and Dr. Wm. C. Williams, Sterwin Chemical Co. of Atlanta, Ga.

ARKANSAS POULTRY PLANT

RUSSELLVILLE, ARK. — Independent Poultry Co., Inc., a new firm, has started operations in its new plant here. L. C. Moorehead, general manager, said the plant will process about 4,000 broilers or 2,500 hens daily when it reaches peak operation. It will market its chickens under the brand name, "Pride of Arkansas."

Curtis Y. Wagner

ON THE JOB AT 90—Curtis Y. Wagner, owner of the Bellefonte (Pa.) Feed Mill, celebrated his 90th birthday recently by putting in a typical day's work at the office, something he's been doing for nearly 80 years.

At 90, Feed Mill Owner Still Reports for Work

BELLEFONTE, PA. — Curtis Y. Wagner reported to work at his feed mill in Bellefonte as usual Thursday morning, Jan. 12. The day wasn't much different from the countless days he has reported to work at a mill since he was a young boy.

The date, however, had significance because it was his 90th birthday. That is about all because he spent a full day there, as usual.

Mr. Wagner, owner of the mill he built in 1920, has been around grist mills since he was born.

He goes to work well before 7 a.m. and spends a full day working in the office. Except for times of brief illness, he has been doing that for nearly 80 years.

Franchise Awarded To Tennessee Firm

NASHVILLE, TENN.—Acme Feed & Hatchery of Nashville has been appointed an exclusive dealer for FMC bulk transport systems in the states of Tennessee and Kentucky, according to an announcement from Food Machinery & Chemical Corp. sales headquarters in Riverside, Cal.

In addition to handling the sales of FMC bulk feed bodies, the Acme organization also provides parts, service and installation facilities for these units at Nashville.

Founded in 1940, Acme Feed & Hatchery, headed by Lester and Currey Turner, is a distributor of poultry equipment and a retailer and wholesaler of feed, seed and serum. This company also operates a chicken hatchery.

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MANKATO, MINNESOTA • CEDAR RAPIDS, IOWA • MARION, INDIANA • SPRINGFIELD, ILLINOIS

FINANCING FOR THE FUTURE—The possible future patterns of financing for the poultry industry were discussed by this panel during the big Southeastern Poultry & Egg convention in Atlanta. Left to right are: Wayne Carpening, Wachovia Bank & Trust Co., Winston-Salem, N.C.; Peter H. B. Dumming, H. A. Caesar & Co., New York; Dr. Robert Dince, professor of finance, University of Georgia, Athens; Harold Snyder, Arkansas Valley Industries, Dardanelle, Ark.; Joe Frank Sanderson, Sanderson Bros., Laurel, Miss.; Ron Goddard, G.L.F., Ithaca, N.Y.; Bill Haffert, Broiler Industry, Sea Isle City, N.J., and presiding officer Henry Tilford, Dixie Grain Co., Shelbyville, Tenn.

'Simplified' Hog Ration Called Risky

MADISON, WIS. — A "simplified" corn-soybean meal ration for growing hogs is risky for many farmers, according to a University of Wisconsin scientist.

Dr. R. H. Grummer said that the average hog grower would probably be better off with a ration that includes tankage or meat scraps and alfalfa meal in addition to the corn and soy (plus fortification).

The comments were in a news release issued for farm and consumer publications. Feed men may be interested in what it said.

The release follows:

"What about a simplified hog growing ration made of corn and soybean oil meal with fortification by vitamins, minerals and growth promoting drugs?

"Such a ration will do a good job, says a University of Wisconsin livestock specialist—but only if the ration is used carefully by an above-average hog producer who has machinery for thorough mixing of the fortifier, the knowledge needed for evaluating fortifier pre-mixes, and a willingness to follow recommendations to the letter.

"Dr. R. H. Grummer feels the average Wisconsin hog grower would probably be better off with a ration that includes more variety—one that contains tankage or meat scraps, and alfalfa in addition to the corn and soybean oil meal.

"Dr. Grummer gives three reasons a corn and oil meal ration is risky for many farmers:

"(1) Some farmers will cut the fortification when they're short of cash. This would leave the simplified ration seriously short of vitamins, minerals, and drugs.

"(2) Many different kinds of premixes are available for providing the fortification. They don't always contain the proper proportions of the essential ingredients. It's hard for most farmers to tell which will do an adequate job.

"(3) You use very small amounts of concentrated vitamins, drugs, and minerals. It's very hard to get these mixed well with the other ration ingredients using equipment we normally have on farms and in some local feed mills here.

"There are many satisfactory programs for feeding swine. Formulas containing corn, soybean meal, meat scraps or tankage, a quality hay product, salt (with trace minerals), ground limestone, antibiotics, zinc salt and vitamin D are adequate to promote rapid and economical growth in many herds.

"Herds that are under unusual stress, such as disease, may require additional fortification with vitamins and other essential nutrients. In such herds it is wise to use a fortified protein supplement or a pre-mix of critical ingredients that can be added to the regular ration."

IOWA CONSTRUCTION

OSKALOOSA, IOWA — Construction is progressing on the plant of the Mahaska Feed & Grain Co. with prospects of being ready for occupancy by May 1, according to company officials. The plant is expected to be in full operation by June 1. The new plant will house 18 by 30 ft. office quarters, a 24 by 30 ft. storage and cleaning room and 23 overhead feed and grain storage bins with capacity of 10,000 bu. The milling equipment will be housed in the 24 by 50 ft. basement.

Ghostley's Poultry Expansion Announced

ANOKA, MINN.—Ghostley's Poultry Farms, Inc., here has been expanded through the recent purchase of the Leather's Farm from Hugh Leathers, Anoka, according to announcement by Fred Ghostley, president.

The 50-acre poultry farm is located seven miles northwest of Anoka. With the present facilities on the farm, 16,000 breeders are being housed. This increases the Ghostley's Poultry Farms, Inc., housing capacity to 125,000 breeders. Total area for poultry breeding and research now totals 1,200 acres. And this is the eighth farm owned and operated by Ghostley's, the announcement said.

"The addition of the former Leather's Farm is another forward step in the rapid expansion of the Ghostley's Poultry Farms necessitated by Ghostley Pearl sales in the U.S. and foreign countries," Mr. Ghostley said. "We are now shipping to Central and South America, Canada and western Europe in addition to every state in the country."

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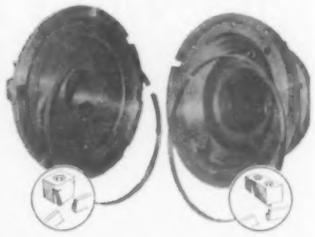

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Eliminates long, costly downtime in replacing standard die housings. Bushing absorbs the wear — is easily replaced in 15 minutes at a fraction of normal cost.

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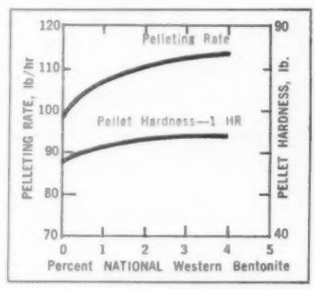
Better Pellets Through BAROID RESEARCH

BAROID'S NATIONAL* Western Bentonite increases pellet production and hardness . . . reduces fines

LABORATORY REPORT ON RANCH CUBE PELLETIZING

Baroid Chemical's Feed Research Program has found that the use of NATIONAL Western Bentonite in ranch cube formulas increases pellet production and hardness while reducing "fines."

The accompanying chart shows that the pelleting rate at maximum pellet mill capacity increases substantially when Baroid's NATIONAL Western is used as a pelleting aid. Note that both pellet hardness and production rate go up as the percentage of bentonite in the ration increases.



Optimum performance is reached at a 2-3% concentration of NATIONAL Western. This amount gives a 13-15% rise in the pelleting rate and an 11-12% increase in pellet hardness. As little as 1% bentonite improves the pelleting rate nearly 10% and raises pellet hardness 8%.

In tests conducted at Baroid Chemicals' Research Laboratories, NATIONAL Western Bentonite replaced an equivalent quantity of milo in 20% protein cattle feed rations. More detailed information on the use of Baroid's NATIONAL Bentonite in ranch cubes can be obtained by mailing the coupon below.

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SELLIN' SAM — By Jim Zilverberg

"I'm recommending a new feeding program for you!"

New York Poultry Action Program Set

ITHACA, N.Y.—Approval of an industry-wide poultry action program, and election of an over-all New York State poultry coordinating committee were actions completed at a meeting at Cornell University.

The meeting brought to the New York State College of Agriculture 48 representatives and leaders from 13 segments of the poultry industry who are interested in boosting the economic position of the industry.

Ralph Webster of Auburn, a hatcheryman who is also president of the New York Poultry Council, was elected chairman of the 23-member State Coordinating Committee. This group will study, plan, and promote research, sound production and marketing practices, and bring results to producers and related segments of the poultry industry of New York State.

Named vice chairman was Kenneth Bullock of Ithaca, commodity director, New York Farm Bureau. Prof. O. F. Johndrew of the Cornell poultry department was chosen secretary.

Among other members of the state coordinating committee are three feed industry representatives — Dr. John Snyder of Beacon Milling Co., Cayuga; Dr. John Huttar of Cooperative G.L.F. Exchange, Ithaca, and Otto Huhta, Oneonta. Monroe Babcock of Ithaca is among the members, too.

The coordinating committee named four sub-committees to investigate and set up action programs. Floyd Snyder of Lockport heads the marketing group; Dr. Huttar is chairman of the promotion and publicity subcommittee; Dr. Snyder heads the production and business management unit, and Warren Hawley III of Batavia is new products chairman.

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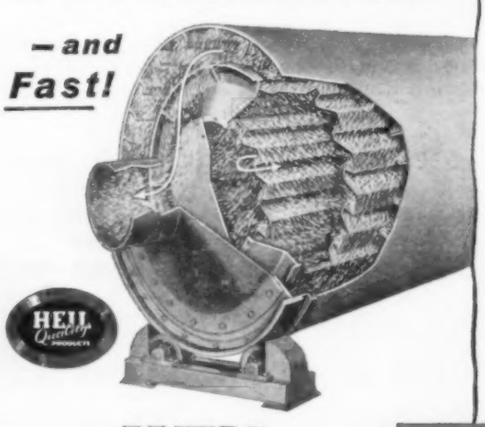

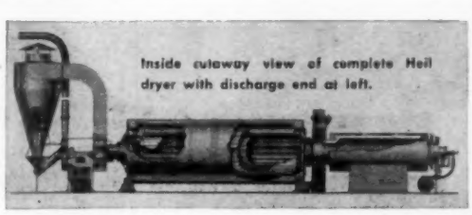

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There's almost no difference in the moisture content of particles that have gone through a Heil dryer — regardless of size. That's because the drying process takes into account the size and weight of particles.

Heavier particles move more slowly through the three cylinders of the multi-pass drum. Lighter particles pass quickly through the hot air to the cooler outside cylinders. And the compound showering flights on each cylinder wall keep the particles in motion with no surging.

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NATICO is the richest dry molasses product available! Add it to your feed for more profitable production and more *economical feeding costs.* Natico is an all sugar cane molasses product, adds attractive new color and fragrance to feeds . . . even makes dry home-grown grains and roughages tastier to livestock. Try Natico and watch feeding costs go down!

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'Money Is Key to Sound Business Expansion,' Says Finance Officer

ST. LOUIS—Money is a key factor in the sound growth and expansion of the retail feed business as well as the feed manufacturing business.

That is the advice of A. J. O'Brien, Ralston Purina Co. vice president, secretary and chief finance officer, to dealers in an article entitled "Money Management in the Sixties" appearing in a special issue of the firm's publication, Checkergraph.

Mr. O'Brien said that Purina has traditionally followed the practice recommended to dealers — plowing back a big proportion of profits into the business after making adequate provision for reserves to cover future contingencies.

Through following that practice, he said, Purina enters the decade of the 1960's with "substantial cash reserves, with a very favorable current ratio, with resources to finance not only the expansion of physical facilities, but also the growth of accounts receivable on a sound, business-like basis.

"So we are ready with money. But just as important, we are ready with manpower. Every man on our credit staff—every credit manager at our branch plants—has been carefully selected and thoroughly trained not only in the administration of sound credit, but also in the profitable and sound operation of the money side of a dealer's business.

"We have done everything we know how to put our own house in order. And this is extremely important to you as a dealer. The value of our Purina franchise would be very doubtful if our own financial position was in any measure unsound."

Preparing for the 1960's

Mr. O'Brien's suggestions on what dealers should do to prepare for the decade of the sixties follow:

First of all, we suggest he should become just as concerned about the soundness of his business as he is with its profitability.

In the post-war years of rapid expansion in all phases of our industry, it was only natural that all of the emphasis was placed on profits. But with the increasing importance of money, there is no assurance of the continuation of profits unless they are backed up by sound financial condition and sound management of money.

Sound financial condition means having enough money in the business to get the job done—without too much strain, without borrowing too much. It means having enough working capital. It means looking ahead and foreseeing money needs . . . so that money needed is provided far in advance.

It has been our experience that dealers, especially good dealers, are naturally optimistic about everything, including money. This is a fine trait, but money is nothing more than a tool with which to do business, just like a truck. I'm sure none of you would plan to make deliveries next week or next month just "hoping" you would have a truck available.

While we all hope that profits will be high every year, we should remember that every business encounters poor years occasionally. In the decade of the 1960's, as our volume increases, we need to be more vigilant than ever before setting money aside to cover difficult periods. Over the years Purina's most successful and profitable dealers have been those who took very little money out of the business until they had built up a good equity and a margin of safety for unexpected reverses.

Financial Statements

Second, we suggest that a dealer should take a long, hard look at his financial statements and the use he makes of them; look at the bookkeeping system from which they come, too.

Ten years or even five years ago, under conditions existing at that time, a dealer might have been able to afford the luxury of inadequate records and little or no understanding of his financial statements.

But don't gamble on being in business three or four years from today if you are in that condition today. You might not be around to collect your bet. Slipshod bookkeeping, financial statements issued only once a year, and the lack of a full and complete analysis of every statement have no place in the decade of the 1960's. They went out with dress print bags.

Money Management

Third, there are some additional money management tools which a dealer should look at if he has not been using them up to now. He may find them very helpful in planning for profits and financial soundness.

One of these is an application of funds statements. Many dealers have such a statement furnished them by their accountants — right alongside the profit and loss statement and balance sheet. Others do not—but could profit by having it.

Such a statement begins by showing where the money during the period came from—from such things as net profits, from increases in notes and accounts payable, from depreciation reserves, etc. And such a statement shows where the money went—to pay off certain obligations, more put into accounts receivable, divi-

Are You Getting the SALT You Pay For?

Carey Ev'r-Flo Gives You Unmatched Performance— For Less Than Ordinary Salt.

"You're paying for Ev'r-Flo . . . but are you getting it?" That's a question every feed mill operator who uses ordinary salt should ask himself. For while ordinary salt may cost less in the beginning, it can be far more expensive in the long run.

In comparison with ordinary salt, Carey Ev'r-Flo Salt saves money in unloading, handling, and storage. It takes fewer men less time to unload a bulk carload of Ev'r-Flo. It costs less to handle Ev'r-Flo. And it takes less space to store Ev'r-Flo — you can actually store up to 125 tons of Ev'r-Flo in the same space required by 100 tons of ordinary salt!

This is because Ev'r-Flo flows more freely, flows faster, and packs tighter — without caking or lumping.

In fact, Carey Ev'r-Flo flows free and easy under *all* conditions, because of the exclusive Carey manufacturing technique. Ev'r-Flo Salt repels moisture and humidity with amazing efficiency, keeping dry and grainy. This means flowability — and uninterrupted mixing under all climatic conditions.

While salt may be only 1% of the average mixed feed, it can be the difference between profit and loss. Ask any operator who uses Carey Ev'r-Flo. He'll tell you it is the most profitable salt you can buy!

Available in bulk and in bags that feature polyethylene-coated linings, Carey Ev'r-Flo Salt can be ordered on a no-risk basis. Buy it, try it, and if it doesn't perform as suggested, your money will be refunded!

For details on this unprecedented offer, see your Carey representative. Or write directly to THE CAREY SALT COMPANY, Hutchinson, Kansas!

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dends or money withdrawn by the owner.

Two other money management tools even more directly related to planning are budgets and cash projections. Many dealers are familiar with budgeting, but only too few use it as an actual profit planning tool. To budget means to make reasonable estimates in advance of income, and planning expenses that will correlate or fit with the planned income.

The making of a budget forces a manager to make his plans fit together on paper before he goes out and tries to make them work in practice.

Cash projections or cash flow charts are tools very similar to budgets. They provide for planning money needs in advance on paper—needs for more money in sound accounts receivable, in inventories, fixed assets, in flocks of birds or herds of animals.

Here are some of the questions a dealer is brought face to face with when he has an application of funds statement applying to the past and builds budgets and cash flow charts for the future. He faces more realistically the question as to whether or not his funds are becoming frozen in accounts receivable, inventories, fixed assets or whether too much is going out in personal withdrawals. What will the balance sheet look like next quarter or a year from now as his plans materialize? Can he provide adequate cash to meet needs for interest, bank notes due, taxes, payrolls, etc.?

Can he afford to expand now—or does he need to build owner capital in the business to a higher point?

In our experience, one of the poorest areas of management planning is in this field of cash flow. We have seen fine individuals and companies, with adequate net worth, become cash poor as a result of failing to work out an operating budget or cash flow chart that would bring to light the money needs in the period ahead.

Realistic Policy

The fourth thing the dealer of the 1960's must have is a realistic credit policy and program. I believe you will agree that the feed dealer is frequently at or near the bottom of the farmer's "pay list." During the past several years the mechanization of farms and the modernization of farm homes has meant more bills. Failure to pay these, or to pay machinery, auto, home appliance, furniture bills could mean foreclosure and repossession. If any money is available, these bills are paid and the feed dealer can wait.

Ask yourself these questions: What are your accounts receivable really worth? What does "cash" mean to you and your customers? 15 days? 30 days? 60 days? Do you give a cash discount to encourage cash business? Do you have a service charge on delinquent accounts? Is it big enough to make a customer borrow from the bank instead of from you?

Do you have a regular program of aging accounts? After you have aged and analyzed your accounts receivable you may well find it necessary to:

(1) Tighten credit policies.

(2) Ask for your money.

(3) Use local banks by discounting customer's notes. The local bank is frequently a better collector.

(4) Obtain all available credit information on present and prospective customers.

(5) Take security in the form of chattel and real estate mortgages.

Now what can you do to help yourself? The first step could very well be to ask your salesman and branch plant credit manager to help you appraise your financial condition, your records and statements, the other planning tools you use and your complete credit control program.

Plans for Future to Reign at Feed Show, AFMA Convention

CHICAGO — Expansion plans for the future are expected to be uppermost in the minds of those attending the National Feed Industry Show and annual convention of the American Feed Manufacturers Assn. at the Conrad Hilton Hotel here May 7-10, according to word from the headquarters for the feed show.

The feed show headquarters says that exhibit space is already at a premium. It is reported that 85 firms have taken space for the 1961 show. Show headquarters says that with predictions of expanded feed production in the next 10 years, many attending the show will be getting their first ideas on future plants, equipment and supplies.

The headquarters also reports that exhibitors already booked represent a wide range of supplies, machinery and services used by grain and feed companies. Approximately 40% of the displays will feature actual feed and grain milling and handling equipment and in such close proximity that comparisons by industry persons will be easy.

This show coincides with the speaking and entertainment program planned by AFMA which is said to be expecting that attendance will be stimulated by signs of substantially better total production for 1961 than 1960.

A small amount of floor space is reported to be still available from the National Feed Industry Show, 1712 W. St. Paul Ave., Milwaukee 3, Wis.

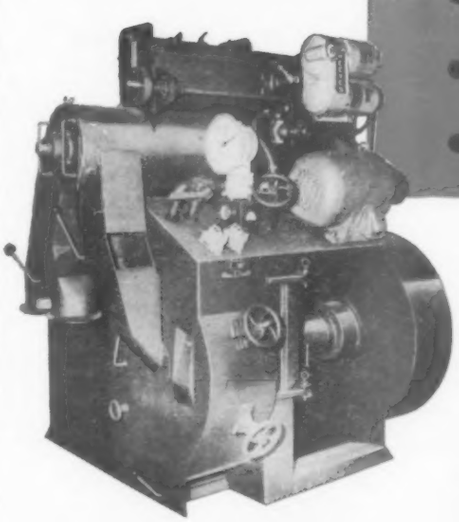
EXCHANGE MEMBER DIES

MEMPHIS, TENN.—James B. McGinnis, Sr., freight traffic representative of the Memphis Board of Trade since 1917, died recently at his home here following a long illness. He was 76.

Wenger Multi-Duty PELLET MILLS

One Unit Producing All 3 Major Types of Feed

- HARD PELLETS WITH OR WITHOUT LIQUIDS
- WENGERBLENDED MASH FEEDS ONE OR TWO LIQUIDS
- HI-MOLASSES PELLETS OPTIONAL (30% to 50% Molasses)



Owners believe that the Multi-Duty is unequaled in its rugged construction, its top hard pelleting capacities, and its versatility. No other pelleting equipment has brought such great opportunities for meeting all the needs of feed manufacturers—at a cost within the reach of most. The Multi-Duty is more than a producer of feeds—it's a creator of opportunities.

Phil Wake, J. H. Wake Feed Mill, Oskaloosa, Iowa, has a fine new feed mill built around a Multi-Duty. Mr. Wake comments:

"We have used The Multi-Duty Pellet Mill for over a year for the production of complete swine and poultry rations, plus the manufacture of a high molasses pellet, which we were unable to make previous to this installation.

"The simplicity and ease of operation has been remarkable. The capacity also is greater than anticipated while maintenance is a very minimum".

Complete Swine and Poultry Feeds & Molasses Pellets

Gordon McKinney, General Manager, Honeggers & Co., Inc., Lincoln, Nebraska has this to say about their Multi-Duty:

"Honeggers' operate Wenger Multi-Duty Pellet Mills in plants at Lincoln, Fairbury, and Indianola. In our Lincoln plant, the 125 HP Multi-Duty equipped with three liquid conditioning feeders (molasses, fish solubles and fats) produces top quality range cubes, hard pellets and crumbles, as well as high molasses pellets with molasses content as high as 40%. We are also able to produce fine quality feeds in meal form with high liquid feed content".

Complete Line of Formula Feeds.

Mr. Louis Ebel of the Ebel Alfalfa Company in Scribner, Nebraska, is one of the leading alfalfa processors in the Midwest. About his Multi-Duty, Mr. Ebel has this to say:

"We are most pleased with the performance of our Multi-Duty Pellet Mill and Horizontal Pellet Cooler which are producing fine quality dehydrated alfalfa meal pellets at good capacity rates. We have also developed a nice off-season business on suncured alfalfa pellets with molasses."

Dehydrated Alfalfa Meal Pellets — Suncured Alfalfa Pellets.

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JOE BROOKS

BY AL P. NELSON

Employees Are Curious

Noon hour at the Joe Brooks Mill and store is a break in the day's work which all the employees look forward to, particularly since Joe set up an employee's rest room a few years ago.

In this rest room are a table and benches, a couple of lockers, two wash bowls and two toilets. And there is also an employee bulletin board, always in good shape because Joe personally takes care of it.

On this board Joe places all those things which he wants his employees to know about the business, special things which are for employees and not for customers. And the employees watch this board, too, for they never know what to expect.

On a February day, Butterball Barlow, eating a cheese and rye sandwich and holding a skinned boiled egg in the other hand, stood studying the board, while the rest of the men sat at the table eating from lunch pails.

"Hey, you guys, listen to this," Butterball mumbled with a mouth full of cheese and rye bread. "It says here 'The largest room in the world is the room for improvement.' Hey, do you suppose Joe figures that's a hint for us to improve?"

"Of course," Milt muttered, his mouth filled with chocolate cookies. "But that's for you guys, not me. I don't need to improve."

A roar of derision rumbled the windows of the rest room. "At least," Milt smirked, "my redheads don't tell me I need improving."

"Shut up!" growled elderly Pop Henley. "Quit talking about women. Talk about business!"

"Women are my business," muttered Milt, but Pop, being a little hard of hearing, didn't catch the sentence.

"And here's another one," Butterball called. "'If you died tonight, would anyone be able to straighten out the mess you are making?'"

"No," sighed Milt. "I'm afraid not."

Butterball guffawed. "How's this? 'It's hard to expect a thousand dollar answer to a ten cent prayer.'"

"Now that is a quip that Joe meant for us." put in Smiley.

"What do you mean?" asked Pop.

"Well," explained Smiley, who liked to read books, "Joe is trying to tell us that if we don't give our best efforts to sell feeds and services we can't expect a big bonus, or too much profit sharing. It's as plain as day. And look, he's got that typed saying thumb-tacked right under the placard which lists what we ought to try to sell in March."

"How can you be so smart?" asked Butterball. "I would never have thought of that."

"Oh," grinned Smiley, tongue in cheek. "I've been trained by Milt."

Again a roar shook the window panes.

"I don't get it," Butterball said aggrievedly. "Is that supposed to be funny?"

"Skip it, Butterball," said Smiley, approaching the bulletin board. He read a few of the posted items, as follows:

"Did you know that when you throw mud you always lose ground?

"The colors of the school of experience seem to be black and blue.

"Dairyman's motto: All I am I owe to udders.

"Sometimes women who are easy on the eyes are hard on the ears.

"The man who is worthy of being a leader will never complain about the stupidity of his helpers, the ingratitude of mankind, nor the lack of appreciation by the public."

As Smiley finished reading the employees were grinning and making wise cracks.

"I've got a few home in a magazine I'll bring and post on the board," Milt said with a laugh.

"If you do, I'll censor them!" growled Pop.

"Do you realize," said Ed Reitci, the warehouse man, "that we've been talking about that bulletin board for a half hour? We haven't talked about anything else."

"That's what Joe wants," Milt put forth. "He changes that board once a week, so we'll read it. He knows we like to laugh, so up go the jokes.

"But the sales and service messages are worked in between."

"So what?" asked Pop. "That's legitimate, isn't it? Joe's got messages to get across to us, even during lunch time. And they aren't so hard to take."

"No, they aren't," said Smiley. "I don't mind all those suggestions about selling and service, and being on the ball, so long as there are a couple of

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GET FIVE **PIGS FREE**

FOR EVERY ONE HUNDRED THEY RAISE!

What's the most efficient diet for weanling pigs? That's what recent university feeding tests set out to prove.

Starting with eight lots of purebred Hampshires and Durocs at an average weight of 54 pounds each, every lot received a different experimental ration until the desired weight of 125 pounds was reached.

Best overall ration of the lot? The one fortified with a 5% amount of meat and bone meal!

Pigs on this high-protein meat and bone meal enriched diet outperformed those receiving only vegetable protein in every classification of the test. Compared to the control diet results, they consumed far less feed, showed much greater weight gain, took six days less to reach the 125-pound target weight.

These same findings, when applied to a lot of 100 pigs, would result in feed savings of 2,968 pounds and increased weight gain of 672 pounds . . . almost like getting 5 pigs free.

Best of all, the use of meat and bone meal helps improve the market for animal protein byproducts . . . results in better prices for the feeder when his hogs are sold.

Your local renderer can give you complete details on tests like this, as well as other information on securing more weight gain, lower cost per pound of gain, and increased growth rate for poultry, hogs, and cattle, too! Let him show you how to improve your feed results with stabilized animal fats, meat meal, meat and bone meal, poultry byproducts meal, feather meal, and other products of today's scientific rendering industry.

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jokes with it. Heck, we wouldn't look at that board half so much if Joe didn't post some jokes, too."

"That's it," Milt said. "Joe knows we can't go around being serious all day. Customers wouldn't like that. So Joe tries to make us relax during the lunch hour with bulletin board jokes. He figures a change of thinking is good for us, that we'll go back to work refreshed and not be tense, at least until 4 o'clock or thereabouts."

"Joe is smart," said Pop. "And don't you forget it. But if he makes extra dough he gives us some of it on profit sharing. But he doesn't want us to sit around gettin' broad in the beam waitin' for profits. He wants us to hustle for it, when it's time to hustle."

"I just happened to think of a funny thing that happened when I was out on a date with my No. 3 redhead last Thursday, boys," said Milt. "Want to hear it?"

There was a thunder of yeses, almost drowned out with Pop's loud no. Just then the door opened and lean Bill Grimes stuck his head in. "Holy cow, what's that matter with you guys? Lunch hour doesn't last all afternoon. Come and relieve me. I'm busier than a one-armed paper hanger. And I'm starved! It's time for me to eat."

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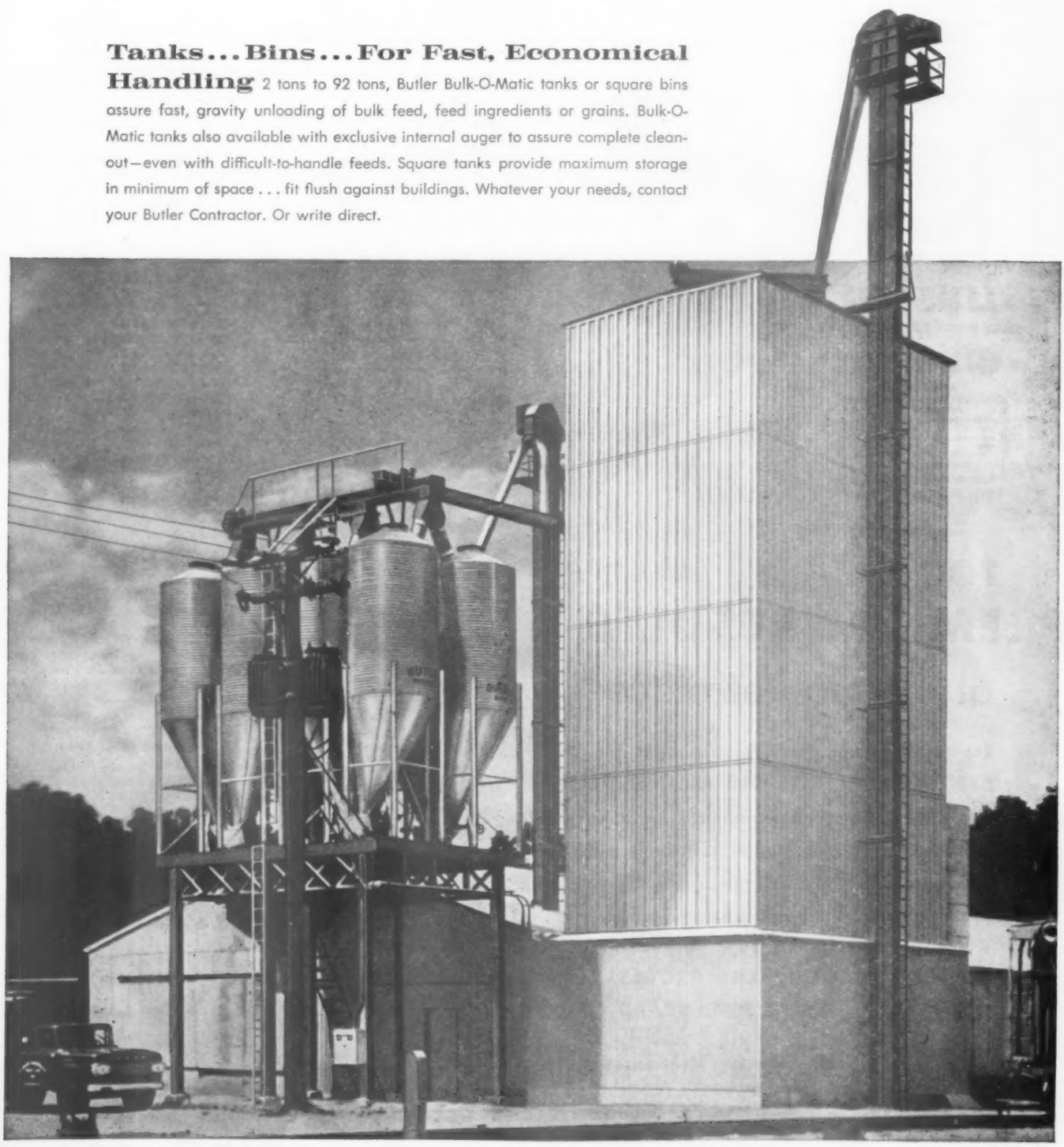

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SWINE DEMONSTRATION—A demonstration of the importance of the right type of hogs and proper feeding of swine was made at Auburn (Ala.) University. The pigs pictured here were among those used in the demonstration which feed men and others saw. In the photo on the left, the white pig is considered to be a meat-type hog which more producers should have. The black pig is described as being of the old chuffy type which farmers should not use for breeding stock. In the second picture, the white pig shown was fed for eight weeks on a modern, well balanced ration. During this test, the pig gained an average of 1.35 lb. per day. The black pig was on a ration similar to the rations most producers used in the 1910-20 period. This pig averaged .62 lb. per day for the eight weeks. These tests were conducted at the Auburn Experiment Station under the supervision of Dr. Howard Tucker of the animal husbandry department.

Production School Chairman Urges Coordinated Research

KANSAS CITY—A major aim of research activities of Feed Production School, Inc., will be to coordinate production and related research which is aimed at the common goal of increasing the profitability of meat, milk and egg production, according to Eric Carlson, chairman of the 1961 Feed Production School.

A "total concept" of research is necessary, said Mr. Carlson, who is with Ralston Purina Co., St. Louis. This means achieving unity of purpose among nutrition, production and marketing research, he said, and it is "natural for production research to begin bridging the gap because of their reluctance to change in the past."

"Production research must have same understanding of nutritional and marketing research (and vice versa)," Mr. Carlson said. "Each must relate its problems and their solutions to the problems and solutions of the other.

"The Feed Production School, in the past, has recognized the 'total concept' and the partnership involved. Today we are on the threshold of complete unity of objective and full understanding of the total concept.

"We must realize that there is no production laboratory large enough, nor is there time enough available to any single individual or group to solve the many immediate problems. The 'whole truth' will only be obtained by many people working on many problems through coordinated effort. The major purpose of the research activities of the Feed Production School will be to supply this coordinating effort."

Mr. Carlson said that the school should (1) define basic principle requirements of participants in production research efforts and (2) outline coordinated activities required by the production school research program.

With the acceptance of these responsibilities by the industry and Feed Production School, Inc., a long range program of planned production research can be launched. This program, he added, will form the basis for a "true technology of feed production" and will thereby increase the industry's competitive ability.

Current research information and other basic information on feed mill operations will be presented at the 1961 school, set for Sept. 11-13 in Kansas City.

CHARGES SUSTAINED

ST. JOSEPH, MO.—Hugh Sperry, Regional National Labor Relations Board director at Kansas City, has informed Local 125, United Cereal Workers, that charges it made of unfair labor practices against the Benton Du-It Feed Co. here have been sustained. The union had charged the company with interfering in the employee's free choice of a bargaining agent and with threatening to close the plant if the union won an election held Nov. 17. In the election Local 125 was decertified but the result of the election has been set aside by the N.L.R.B.

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There's None Better!

Cumulative Cost by Week for Growing Small-Type Leghorn Replacements

Week	Chick	Litter	Fuel	Misc.*	Feed	Total
	cents	cents	cents	cents	cents	
1	40	.600	1.000	1.0	1.094	$0.44
2	40.2	.602	1.504	2.0	2.730	.47
3	40.3	.605	2.010	2.0	4.902	.50
4	40.6	.608	2.518	2.5	7.605	.54
5	40.7	.610	3.029	2.5	10.833	.58
6	40.8	.613	3.042	2.5	14.849	.62
7	41.0	.615	3.055	3.5	18.997	.67
8	41.2	.618	3.068	3.5	23.611	.72
9	41.3	.620	3.081	3.5	28.446	.77
10	41.5	1.223	3.094	5.5	33.499	.85
11	41.7	1.228	3.107	5.5	38.703	.90
12	41.8	1.233	3.120	5.5	43.882	.96
13	42.0	1.238	3.133	5.5	49.274	1.01
14	42.2	1.243	3.146	5.5	54.641	1.07
15	42.4	1.248	3.159	5.5	60.102	1.12
16	42.5	1.253	3.172	6.0	65.539	1.18
17	42.7	1.258	3.185	6.0	71.179	1.24
18	42.9	1.263	3.198	6.0	76.795	1.30
19	43.0	1.268	3.211	6.0	82.387	1.36
20	43.2	1.273	3.224	6.0	87.950	1.42
21	43.4	1.278	3.237	6.5	93.489	1.48
22	43.5	1.283	3.250	6.5	99.300	1.54
23	43.7	1.288	3.263	6.5	105.533	1.60
24	43.9	1.293	3.276	6.5	112.178	1.67

*Includes vaccination, medication and insurance.

Table Shows Cost of Leghorn Replacements

CAYUGA, N.Y.—The Beacon Milling Co., Cayuga, a division of Spencer Kellogg & Sons, Inc., has assembled a table that shows the cumulative cash costs by week for growing small-type leghorn replacements, according to Dr. J. M. Snyder, director of research.

The table (accompanying this report) does not include the cost of such items as labor, buildings, equipment, depreciation and interest on investment. Fixed cash costs such as the chick litter, fuel and miscellaneous are adjusted to take care of mortality and culling losses. Mortality and culling losses are computed to be 10% of the number of chicks started, said Dr. Snyder.

EGG FARM FORMED

PHOENIX, ARIZ.—Moore's Happly Hen's Egg Farm, Inc., with principal place of business to be in Phoenix, has filed articles of incorporation listing $500,000 authorized capitalization to produce eggs for market and for hatching, breeding and growing poultry. Incorporators and initial board of directors include Maurice H. Moore, president; Othello Campbell, vice president, and Effie Moore, secretary-treasurer, all of Phoenix.

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ACCURATE BLENDING OF CONCENTRATES FOR BEST DOLLAR RETURNS FROM ANIMAL and BIRD FEEDING with the
BLUE STREAK Prater TWIN-SPIRAL TWO-SPEED MIXER
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AND 44 OTHER FEEDS

Here are some reports on recent work offering a solution to the Blood Spot problem

FEEDSTUFFS, June 11, 1960

Scientist Discusses Egg Bloodspot Causes

MANHATTAN, KANSAS—Rodenticides or a shortage of vitamin K in rations may cause eggs with bloodspots, according to Dr. Paul E. Sanford, poultry husbandry department at Kansas State University.

Referring to low vitamin K, the poultry scientist noted that most poultry rations now contain dehydrated alfalfa meal as a natural source of vitamin K, and that some feed manufacturers are adding synthetic vitamin K as a guard against the hemorrhagic condition.

Dr. Sanford says a 1-2% loss due to bloodspots is to be anticipated (on the candled basis), but if the grading loss runs much higher than 2%, a poultryman "must" become concerned.

Firm's Test Shows Vitamin K Reduces Blood Spot Incidence

VALLEY STREAM, N. Y. – Recently announced experimental results indicate that the feeding of vitamin K reduces the percentage of blood spots in eggs—an abnormality which causes heavy marketing losses.

This observation comes from work conducted by Heterochemical Corp. to study the value of using stabilized vitamin K premixes in retarding the incidence of egg blood spots.

In a technical paper on the tests involving "Hetrogen K Premixes," a brand of stabilized menadione sodium bisulfite produced by Heterochemical, Raymond Berruti and Gilman T. Dedrick conclude:

"It appears that under experimental conditions the addition of 4 gm. of stabilized Hetrogen K per ton of commercial layer feeds would be of great economic advantage in decreasing the number of eggs with blood spots and increasing the percentage of marketable eggs."

Summarizing results of the study in which the incidence of blood spots, egg production, egg weight, interior egg quality and feed consumption were emphasized, Mr. Berruti and Mr. Dedrick report that hens with a history of high blood spots when taken off feed containing 4 gm. of stabilized vitamin K returned to laying eggs with a higher percentage of blood spots.

"These results suggest," they say, "that the stabilized K had a marked effect in prevention of hemorrhages of blood vessels inside the yolk sac and follicle."

More Research Needed

The investigators observe that the need for additional research in the area of reducing blood spot incidence is apparent, and they note that previous work with lower levels of vitamin K of "a questionable stability" showed no curtailment of blood spot occurrence.

They say the study they describe was initiated in view of recent technological advancement in the stabilization of vitamin K in premixes and in view of new information relative to blood spot formation.

They say blood spots in shell eggs continue to be a serious problem for the poultry industry. "Economic losses from these defects are great and with the development of automatic detecting devices the problem is becoming even more intensified from the standpoint of breeder and producer."

Test Procedure

Heterochemical's vitamin K study began with the placing of 540 White Leghorn hens, 14 months of age, in individual 8-in. wire cages. These hens were fed a basal diet on which they had been maintained since reaching 50% production.

The birds were divided into three rows of 180 birds each. Rows A and C were fed the basal diet, while row B was fed the same diet plus 4 gm. of Stabilized Hetrogen K per ton of ration. These hens were maintained in a cage layer house at temperatures which normally exist under winter conditions (in northeastern U.S.). A uniform light day of 14 hours was maintained.

After the fourth week, row B was split into two sections. One section continued to receive the basal ration plus vitamin K. The other section was fed the basal ration only.

Mr. Berruti and Mr. Dedrick report that the percentage of blood spots for row B, the group fed the basal diet and vitamin K, at the beginning of the trial was 6.9%. Row A and row C percentages were 6.3% and 7.7%, respectively.

At the end of the two-week period following initial feeding of Hetrogen K to row B, the incidence of blood spots dropped to 3% in this group, while little change in incidence appeared in rows A and C.

The investigators report that at the end of the four-week period a further decrease (1.7%) in blood spots was evident in row B birds. Row A and C hens continued to show only slight change in the percentage of blood spots.

Mr. Berruti and Mr. Dedrick note that birds receiving supplementary Hetrogen K returned to laying eggs with a high percentage of blood spots within 16 days after the removal of supplementary K from the ration. One half of the birds in row B which continued to receive supplementary K laid eggs with an incidence of blood spots of 1.9%, whereas the group of birds taken off of Hetrogen K laid eggs 5.4% of which exhibited blood spots.

Further investigation is needed, the report authors say, to determine whether the reduction of blood spot incidence among birds in the test group was "due to the effect of Stabilized Hetrogen K in keeping blood vessels in better clotting condition or due to increased availability over other forms of vitamin K."

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No. 7330—Feed Analysis Table

A newly revised and larger edition of its feed ingredient and analysis table has been published by the Amburgo Co.

The company reports that all listed values have been revised to conform to the latest analytical findings of nutritional authorities. Margins of safety are provided in each instance.

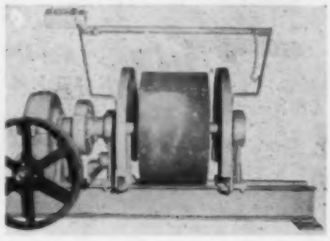
Two new columns on amino acids have been added, a listing reportedly not usually shown on standard charts. The chart is printed in two colors and can be used as a wall reference. A 12 month calendar is provided at the bottom for additional service, it is reported.

For additional information, check No. 7330 on the coupon and mail.

No. 7328—Manlift Safety Device

A new safety stop device for employee manlift elevators that prevents a rider from going over the top if he neglects to get off at the top landing, or if other stop devices fail to function properly, is announced by the Humphrey Elevator Co.

Designated the SAH-12 safety stop device, it consists of a lightly supported tubular steel bar and an electrical limit switch. Officials claim that if a rider should reach the top of the manlift, some part of his body will hit the tubular bar and knock



it off its support. At that instant, the limit switch reportedly shuts off the power and immediately stops the manlift.

Once the stop device has operated, the manlift elevator cannot be restarted until the drop-out relay has been reset, it is reported.

Clearance between the top of the manlift head assembly and the top stop bar is claimed to be sufficient to permit empty steps to pass over the head pulley in the normal manner.

For additional information, check No. 7328 on the coupon and mail.

No. 7332—Protective Liners

"Facts and Figures" is the name of a new 20-page manual designed and produced recently to describe the uses of protective liners for drums, cans, pails and cartons.

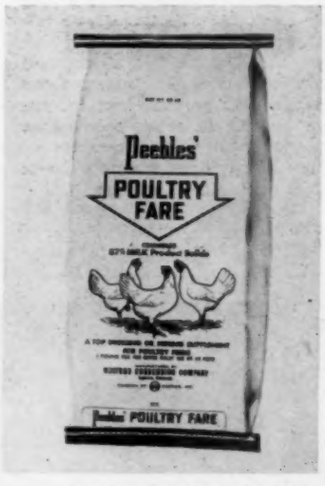
Issued by the Protective Lining Corp., its pages report on liner sizes in various thicknesses and types. The manual also includes a section showing the most efficient methods of inserting and closing liners, report officials. A chart of flexible films for packaging, its properties and values is another section found in the manual.

For additional information, check No. 7332 on the coupon and mail.

No. 7322—Digestive Aid for Poultry

Western Condensing Co., division of Foremost Dairies, announces development of a digestive aid for poultry that is claimed to develop favorable organisms for complete digestion of the regular ration. It contains 87% milk product solids in crumble form.

Called Peebles' Poultry Fare, the



new product is reported to give birds extra nutrition when added at about 4% levels. Company officials claim that this digestive aid is economical to use and easy to feed to all poultry including debeaked and caged birds. It is available in 50-lb. bags.

For additional information, check No. 7322 on the coupon and mail.

No. 7327—Two-Phase Health Tablet

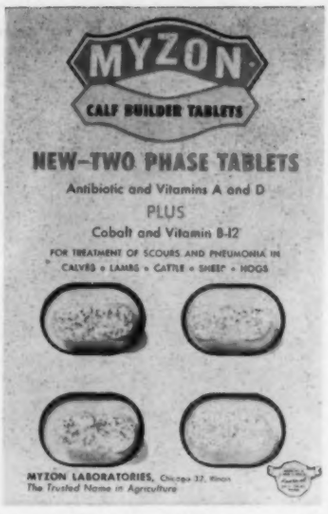
Myzon Laboratories announces introduction of a two-phase tablet which it claims effectively treats bacterial scours, and pneumonias in calves, lambs, cattle, sheep and hogs.

Myzon officials say that the two-phase tablet is a combination of vitamins A and D plus cobalt and vitamin B_{12}, reported to be completely different from any treatment on the market.

It is reported that in addition to the necessary antibiotic, the vitamin A prevents and treats vitamin A deficiency and vitamin D helps in bone development. Vitamin B_{12} is reported to help build blood and treats and prevents vitamin B_{12} deficiency; cobalt is essential in the synthesis of vitamin B_{12} and is active in the rumen.

The Myzon tablets are reported to help prevent and treat bacterial scours, other diarrheas associated with bacillary infections, bacterial pneumonia, (bronchitis, pleurisy), shipping fever, navel infection and bacterial complication associated with pneumonia.

The tablets are packaged four to


MYZON
CALF BUILDER TABLETS
NEW–TWO PHASE TABLETS
Antibiotic and Vitamins A and D
PLUS
Cobalt and Vitamin B-12
FOR TREATMENT OF SCOURS AND PNEUMONIA IN
CALVES • LAMBS • CATTLE • SHEEP • HOGS
MYZON LABORATORIES,
The Trusted Name in Agriculture

a card with each tablet being sealed separately (note photo). This method of packaging is reported to keep the remaining tablets fresh even after one or two have been used.

For additional information, check No. 7327 on the coupon and mail.

No. 7325—Poultry Vaccines

A new approach to vaccine production in which the liquid vaccine material is freeze-dried within its final container, is announced by Dr. Salsbury's Laboratories.

The company says that in adopting the new process for "SoluVac" vaccine, it is achieving a better distribution of virus particles than the former method of freeze-drying in bulk. The results, the firm claims, is a vaccine which will afford greater convenience as well as efficiency in poultry vaccination.

The process works this way: While the bottles of vaccine material are under low temperature in the freeze-drying machine, ice crystals begin to form. The crystals are removed by action of the dry vacuum in the same machine. The resulting tiny holes and channels in the vaccine material produce a honeycomb texture. This allows the material to go instantly into solution when diluent is added.

The final steps are the vacuum-sealing of the container with a special

Send me information on the items marked:

- ☐ No. 7322—Aid for Poultry
- ☐ No. 7323—Grain Fumigation
- ☐ No. 7324—Power Shovel
- ☐ No. 7325—Poultry Vaccines
- ☐ No. 7326—Determinations
- ☐ No. 7327—Two-Phase Tablet
- ☐ No. 7328—Manlift Safety Device
- ☐ No. 7329—Thread Clipper
- ☐ No. 7330—Feed Analysis Table
- ☐ No. 7331—Bag Scale Accessories
- ☐ No. 7332—Protective Liners
- ☐ No. 7333—Feed Antioxidant

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Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D

rubber stopper and adding an aluminum seal to prevent leakage during the storage and handling before the vaccine is used—note illustration which shows the new-type container at left and the old-type at right.

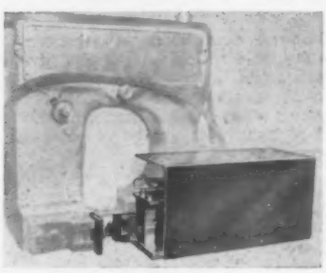
Dr. Salsbury's produces SoluVac vaccines for Newcastle disease, infectious bronchitis, Newcastle and bronchitis (combined), fowl pox, and fowl laryngotracheitis.

For additional information, check No. 7325 on the coupon and mail.

No. 7329—Thread Clipper

Minneapolis Sewing Machine Co. announces introduction of a new automatic thread clipper attachment for its Model M-100 and stationary bag closers.

Reported advantages of the new thread clipper attachment, according to the manufacturer, include a thread saving of 4 in. per bag closed, as well as time and labor savings over hand methods because the thread is



automatically clipped at both front and back of the closure. The clipper is operated by a micro switch for positive action.

Officials claim that the elimination of long, dangling thread ends makes the package more attractive to the consumer and prevents bags from catching on conveyors and loaders.

The company reports that the thread clipper is precision made with cast aluminum housing and simple to install by two screws.

For additional information, check No. 7329 on the coupon and mail.

No. 7326—Carotene Determinations

A disposable, pre-packed plastic tube for carotene determinations by the chromatographic method has been developed by Laboratory Construction Co.

This new product, called Chromato-Tube, provides standardization and greatly reduces time, trouble and labor expenses ordinarily required in carotene, company officials claim. The tube is formed of polypropylene, a new plastic that is reported to be rigid and has good transparency.

The Chromato-Tube is pre-packed and ready for immediate use. Company officials claim that it permits

results that can be reproduced and offers a means of coordinating methods between laboratories—note use of tube in photo.

Because it does away with mixing, measuring, packing and glassware washing, the Chromato-Tube is reported to save time and labor-cost in the laboratory.

For additional information, check No. 7326 on the coupon and mail.

No. 7323—Grain Fumigation

A new cyclinder fan, especially designed and adapted for recirculation of grain fumigation, is featured in a new brochure on Dawson 37 fumigant, recently issued by Ferguson Fumigants, Inc.

Construction of the new cyclinder is reported to provide a greater pressure and result in a faster flow of the fumigant during the circulation process.

An extra large head space is provided and it is packed under extra pressure so that the cyclinder will completely empty itself even in cold weather, the manufacturer states.

It is claimed that the use of a high capacity valve empties the cyclinder three times faster than commonly used valves.

The manufacturer reports that the gas flow can be regulated to obtain thorough dispersion in the time of a single pass of air through the stored

Step up the
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INCREASE YOUR FEED SALES AND PROFITS
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NEW AUTOMATIC HOG FEEDERS

- Increase equipment sales and profits . . . develop new customers . . . serve more customers in less time.
- Specifically designed for bulk feed set-ups . . . bulk tank capacities from 4 to 11 tons.

A Size and Set-Up to Fit Any Need

Available in packaged set-ups in capacities from 80 to 500 hogs, using either rectangular or round feeders. Custom installations available for any capacities to meet your customers' requirements. Bulk tanks hold from 4 to 11 tons. Automatic, dependable operation. Feed flows into hopper (A) from bulk tank and is carried into feeder by auger (B). Holes in tube allow feed to drop into feeder. When feeder is filled, switch (C) stops motor. When more feed is needed, switch starts auger running again.

BROWER'S new Automatic Feeding System offers your customers the most efficient method yet devised to get faster, more profitable gains with a minimum of time and labor! Once the bulk tank is filled, the Brower Auger takes over all the work — a sales natural for you!

You also make more profit through bigger volume sales to your bulk customers; lower your overhead costs; provide more efficient customer service; have more time to develop new business.

Brower's Automatic Feeder never forgets . . . never neglects . . . keeps each feed hole filled 24 hours a day without supervision. Completely automatic — no time switch . . . no manual on-off switch. Timid pigs get their chance at a full trough . . . all hogs eat more . . . make faster, more profitable gains. Easy and economical to install . . . designed and engineered to last for years. Feed Lot Automation using the BROWER System is the key to **extra** profits for both the feed dealer and the hog raiser!

• PRICED LOW . . . CASH OR TIME PAYMENTS. WRITE FOR DETAILS

Free

Every feed dealer should have this booklet. Gives plans, drawings and complete specifications for automatic hog feeding systems. Send today . . no obligation.

BROWER Mfg. Co. 633 N. 3rd., Quincy, Ill.

Please send FREE AUTOMATIC HOG FEEDER BOOKLET

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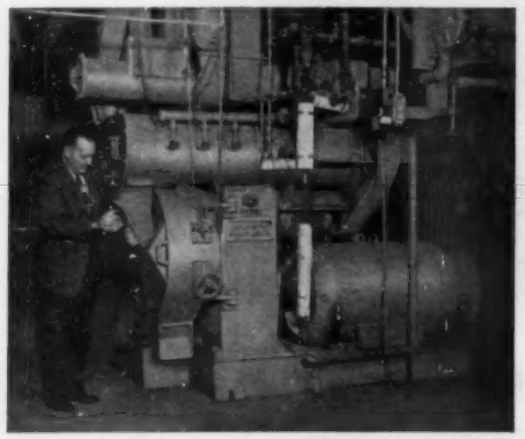
WINNIPEG-VANCOUVER
LONDON, ENGLAND
Schwartz & Co., (Grain) Ltd.
Victoria Products and Grain
(overseas agents) Ltd.



Perfect pellets with any molasses content up to 30%. No special adapter head or other pellet mill is required. You choose whether to produce molasses mix or conventional pellets. The CPM "Century" M. P. produces either, with highest quality — at lowest cost per ton. Get all the facts on this remarkable mill today. Call your CPM representative, or write the office nearest you.

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The Potent, Economical Source of 5 Most Important Feed Values
1. Enzymes • 2. Unidentified Factors • 3. B Vitamins including B_{12}
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FOR ALL CATTLE, HOGS, SHEEP, CHICKENS, TURKEYS
Yeast Culture Values Proven by State College Tests
Write DIAMOND V MILLS, INC. • *Cedar Rapids, Iowa*

grain, usually about six or seven minutes.

This, it is reported, eliminates the necessity for multiple passes to obtain adequate dispersion of the gas in the grain and eliminates much leakage and gas loss usually resulting from the longer operation.

For additional information about the new container and its use, check No. 7323 on the coupon and mail.

No. 7331—Bag Scale Accessories

A new bulletin describing various accessories for the G-17 semi-automatic bagging scale has been announced by Richardson Scale Co.

Accessories include camgrip bag holder, manually operated universal bag holder, air-operated universal bag holder, quick-change spouts, bag counter, portable scale frame and gate switch.

Officials claim that these accessories help the G-17 to meet widely diversified bagging needs in the feed and grain, chemical and food processing industries.

The manufacturer says that the G-17 scale may be supplied with belt feeder, with screw feeder or with vibratory feeder. For sticky materials, Teflon lining can be supplied in bag spout, chute and on other surfaces. For corrosive or abrasive materials, stainless steel can be supplied, it is reported.

For additional information including a copy of the new bulletin, check No. 7331 on the coupon and mail.

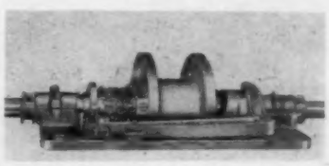
No. 7324—Power Shovel

Webster Manufacturing, Inc., reports development of an improved automatic power shovel for unloading bulk materials from railway cars or long truck trailers.

Known as Webster 40, it is reported to be suitable for handling grain, feed, coal, lime, cement and numerous other commodities. It can be used with wood, aluminum or steel scoops.

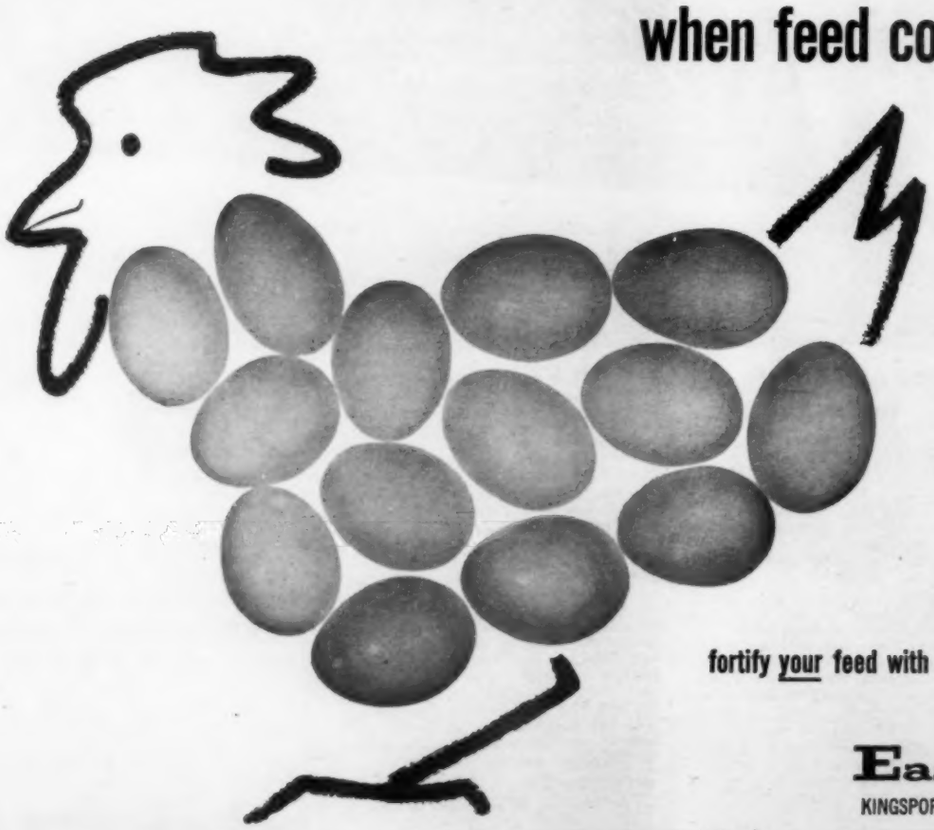
Shovel mechanism, as illustrated, is available in single and double types. It is mounted on a rigid support 10 to 12 ft. above the car door level. Shovel is designed for maximum travel of 35 ft. This can be extended on special models, it is reported.

Among mechanism features listed by the company is an exclusive reversing system that is reported to eliminate need for hazardous counterweights. It is said to provide reliability and safety unavailable in many unloading devices. The central-



layers seem to be made of eggs...

when feed contains Tecmangam



For productive, healthy flocks manganese is essential —and Tecmangam is an ideal source for this vital element.

Tecmangam contains 75-78% manganese sulphate in a completely soluble, readily assimilable form. It is easy to add to feed. Free-flowing, non-dusting, Tecmangam is a clean material to work with.

In addition, Tecmangam helps chicks remain free of perosis. Egg shell breakage is reduced. Hatchability is improved.

Provide an adequate level of manganese in your feed by adding one pound of Tecmangam to every ton.

fortify your feed with **tecmangam**
Eastman manganese sulphate

Eastman CHEMICAL PRODUCTS, INC.
KINGSPORT, TENNESSEE · Subsidiary of Eastman Kodak Company

Don Sanderson (left, center) reports, "We have fed nine thousand cattle on Stilbosol rations. All college feeding tests, plus our own experiences, proved to us that you can't stay in this business without Stilbosol."

"Our cost of gain went down 4¢ a pound when we put Stilbosol back in our ration"

"We're feeding Stilbosol again... this time for keeps," reports Don Sanderson, S&J Feedlots, Norton, Kansas.

"Right after we went back to Stilbosol, we had a load of steers come in. We fed them for 140 days and they gained 448 lbs. per head.

"We figure our cost of gain with Stilbosol to run about 19 to 20¢ per pound. Without Stilbosol, our cost of gain shoots up to 23 to 24¢ per pound.

"If we don't feed Stilbosol, we lose about ¼ lb. daily gain per head. By the time it takes to fatten cattle for market, this loss of gain amounts to $9 or $10 a head. As close as they keep the margin on fat cattle, that $10 a head that Stilbosol gives you is most of your profit these days.

"A man couldn't last in this business if he didn't feed Stilbosol. Oh, sometimes he can make a profit if the margin is high enough, but in the long run he's going to go broke," Don concluded.

After seven years, Stilbosol continues to give feeders an extra 15% gain on 10% less feed.

Stilbosol®
(diethylstilbestrol premix)
ELANCO

Makers of **HYGROMIX®** (*S. hygroscopicus* fermentation products) • Streptomycin Sulfate • Vitamin B_{12} • **Micro-Pen®** (special coated procaine penicillin G)

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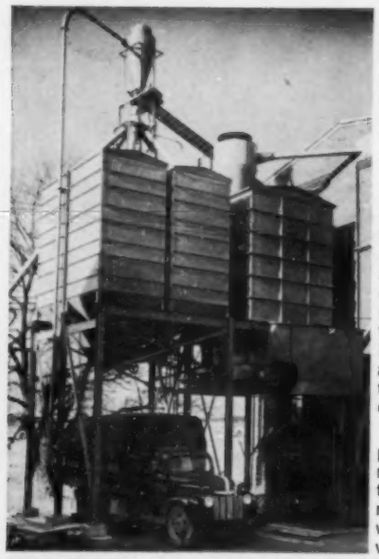
Mill modernization means money for Moyer & Son

Complete design and construction by Fitzpatrick pay off for this progressive Pennsylvania producer!



To forge ahead in a highly competitive market takes the kind of foresight and initiative exhibited by Moyer & Son, Souderton, Pa. They called on Fitzpatrick to completely revamp and modernize their mill for maximum efficiency at lowest possible cost.

A new railroad receiving system to handle bulk concentrates and grain was built along with ten concentrate holding bins (100 tons total capacity) and tied in to existing storage. A completely new elevation and distribution system was installed to serve the entire mill from receiving through processing, storage and/or load out. Four 10-ton bulk bins were added to serve existing mixing system. A new corn sheller and other equipment were included.

Moyer & Son are pleased with the performance of their modernized mill, say the "results speak for themselves!" Perhaps it's time you modernized your mill. Fitzpatrick will give you the most for your investment. Write for brochure!

FITZPATRICK

FEED MILL ENGINEERING, MANUFACTURE, ERECTION

U. E. FITZPATRICK & COMPANY, BURKET, INDIANA

LABORATORY CONTROL *by Wilhoit* CAN BOOST YOUR FEED PROFITS!

Quality control doesn't cost . . . it pays! Get the facts from us.

WILHOIT LABORATORY FLOUR EXCHANGE MINNEAPOLIS 15

ly-located winding drum is of single direction type.

Officials report that there is no right or left hand mechanism and shovel is said to be easy to install and use. It is also claimed to have 50% fewer working parts than many other unloaders. Weight of the single-unit type is 575 lb.; double unit weighs 1,150 lb.

For additional information, check No. 7324 on the coupon and mail.

No. 7333—Feed Antioxidant

Monsanto Chemical Co. reports that livestock producers can now obtain high nutritive value feeds stabilized by an antioxidant previously available only for poultry mixes.

The company says that its Santoquin antioxidant has been given U.S. Food & Drug Administration approval for use in feeds for four-legged animals. This, it is reported, expands application of the compound to include feed for beef and dairy cattle, sheep and swine.

It's noted that Santoquin users will no longer need to maintain inventories of two antioxidants for separate application in poultry and livestock mixes.

Available to mills in liquid and dry form, the antioxident is designed to assure that vitamin A and other nutrients added to the feed are still present when consumed, officials said.

They also claim that it reduces loss of feed values to the animal and bird by preventing oxidation not only in the feed, but in the digestive tract, and during metabolism. Use of the antitoxidant is reported to guarantee maximum utilization of valuable feed ingredients such as vitamin A in high-potency feeds.

For additional information, check No. 7333 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7262—Grain driers, Aeroglide Corp.

No. 7263—Compact trucks and tractors, White Motor Co.

No. 7264—Steam generator, Clayton Manufacturing Co.

No. 7265—Self-feeder for cattle, The Brower Manufacturing Co.

No. 7266—Iron for pigs, Specifide, Inc.

No. 7267—Round nursery pens, The Walsh Manufacturing Co.

No. 7268—Plastic bag handle, Union Bag-Camp Paper Corp.

No. 7269 — Feed bagger, Thayer Scale Corp.

No. 7270—Poultry supplies, The Anderson Box Co.

No. 7271 — Belt splice, General Splice Corp.

No. 7273—Poultry plant cleaning compound, Anderson Box Co.

No. 7274—Bad debt collection system, Transco Envelope Co.

No. 7275 — Lift truck handbook, The Automatic Transportation Co.

No. 7276—Turkey barn insulation, The American Sisalkraft Co.

No. 7277—Round hog feeder, The Oakes Manufacturing Co.

No. 7278—Variable speed drives, Western Gear Corp.

No. 7279 — Terramycin for milk production, Chas. Pfizer & Co., Inc.

No. 7280—Pellet cooler and dryer, Archer-Daniels-Midland Co.

No. 7281—Bin monitor, The Rolfes Electronics Corp.

No. 7282—Hog health products, Dr. Salsbury's Laboratories.

No. 7283—Packaging for poultry medication, Abbott Laboratories.

No. 7284—Mobile feed mill, Daffin Manufacturing Co.

No. 7285—New pig brooder, Nutrena Mills, Inc.

No. 7286 — Mobile mill extension loader, Seco, Inc.

No. 7287—Cellulase enzyme, Miles Chemical Co.

No. 7288—Grain weighing systems, Howe Scale Co.

No. 7289—Feed mix for grub control, Dow Chemical Co.

No. 7290—Poultry disease bulletin, Dr. Salsbury's Laboratories.

No. 7291—Grain dryer lease plan, Daycom, Inc.

No. 7292—Egg room cooler, The National Ideal Co.

No. 7293 — Mixer-blender, A. W. Stauffer & Sons, Inc.

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DEDICATED TO SERVICE ON VITAMIN PRODUCTS STABILIZED FOR TOP QUALITY AND PERFORMANCE

RUDY ESCHENHEIMER CO. Box 147 - Mission 6-3441 CHILLICOTHE, MO.

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GRANITE GRIT

has pex-appeal!

and it gets more food from less feed

CONSOLIDATED QUARRIES DIVISION

THE GEORGIA MARBLE COMPANY • TIFTONIA, GA.

No. 7294—Fertilizer spreader, The Henderson Manufacturing Co.

No. 7295—Poultry and livestock equipment, Brower Manufacturing Co.

No. 7296—Bulk truck bodies, FMC Bulk Transport Systems.

No. 7297—Ketosis medication, Sheffield Chemical Co.

No. 7298—Auto leasing study, Foundation for Management Research.

No. 7299—Electrical control systems, SEMCO Electric Controls, Inc.

No. 7300—Mobile pelleting machine, Daffin Manufacturing Co.

No. 7301—Feed-health program, the American Cyanamid Co.

No. 7302—Bucket elevator, the Shelby Manufacturing Co.

No. 7303—Water medication, Dr. Salsbury's Laboratories.

No. 7304—Continuous flow dryer, A. T. Ferrell & Co.

No. 7305—Herd treater, Chas. Pfizer & Co.

No. 7306—Fertilizer spreaders, the Simonsen Manufacturing Co.

No. 7307—Grain dryer, the Rolfes Grain Aeration Co.

No. 7308—Bin ventilator, the Tierney-Gerber Roto Vent, Inc.

No. 7309—Custom milling brochure, the Prater Pulverizer Co.

No. 7310—Dust suppressor, The Daffin Corp.

No. 7311—Sample extractor, Testing Machines, Inc.

No. 7312—Vertical feed mixer, Seco, Inc.

No. 7313—Oats filmstrip, The Seedburo Equipment Co.

No. 7314—High flow dryer, The Ace Supply & Equipment Co., Inc.

No. 7315—Merchandising tool, Minute Maid Co.

No. 7316—Grain viewer, Gerber Sheet Metal, Inc.

No. 7317—Industrial mills, The Prater Pulverizer Co.

No. 7318—Molasses blender, The S. Howes Co.

No. 7319—Hanging waterer, The Oakes Manufacturing Co.

No. 7320—Feed handling, Sprout, Waldron & Co.

No. 7321—Bag closure equipment, West Virginia Pulp & Paper Co.

FEED AND CATTLE FIRM

BILLINGS, MONT. — Yellowstone Feed & Cattle Co. has filed articles of incorporation, listing $50,000 authorized capitalization and incorporators Marshall E. and Margaret L. Young of Billings and Sumner Gerard, Jr., and Louise Gerard of Ennis.

MERGER

(Continued from page 28)

in single commodities. And you must possess, or be able to acquire, enough capital to merge or absorb other operations.

"In short, look at your business as if it is competing for the same investment dollar as any other business."

Mr. Haffert advised independent segments of the poultry industry to use premeditation in cooperative action. "Don't wait to merge until you have to," he warned. "Choose your partners carefully, combine your assets while they are strong. Choose a single marketing agent and make yourself wholly subordinate to this function. There can be only one boss —the marketer. Otherwise, you're destined to failure before you start."

Examples

Mr. Haffert described two examples of things the independent operator can do, other than corporate mergers, to achieve sales power and obtain benefits such as profit protection and financial stability.

"In 1942, Quality Bakers of America, a federation of independent bakers, decided to market a common brand of bread called 'Sunbeam'," he said. "One Monday morning, all of its members put a 'Sunbeam' loaf of bread on their delivery trucks. To do this, some of the independents had to foresake family trade names that were a century old. It took guts, but the gamble paid off.

"In eight years, Sunbeam became one of the leading bread and cake brands in America. In 10 years, it has risen from an unknown brand to the leading brand in America, despite all of the baking the chains were doing in their own plants.

"Quality Bakers spends about $13 million a year on brand advertising, half of which is on a tie-in basis at the local level. It has a staff of about 175 people. Its most important service, according to George Graf, general manager, is its accounting system. Each member gets individual service. He knows what his break-even point is, or should be, and where he is making his mistakes. No guess-work.

"Quality control is all-important, too. That 'Sunbeam' label must represent exactly the same product to the housewife in Brooklyn, Minneapolis and Honolulu.

"What lesson does Quality Bakers offer for our industry? Above all, says General Manager Graf: 'Don't federate simply to advertise and market a common brand. Start small, concentrate on an attainable field, put a lot of emphasis on internal services, and grow from that point. Your leader needs to be extremely motivated, patient and altruistic. Members must be broad-minded and learn to give and take'."

Another Example

Another example of particular interest to those who deal directly with the farmer:

"Cooperative G.L.F. Exchange, Ithaca, N.Y., is a tax-paying cooperative and its gross volume of business ranks among the first 100 businesses in the country," Mr. Haffert noted. "It has been instrumental this winter in putting together a grower-owned vegetable and fruit cooperative called Pro-Fac. Pro-Fac owns its own processing facilities. G.L.F. holds 51% of the non-voting stock of the grower co-op and 51% voting control of the operating company that runs the processing facility.

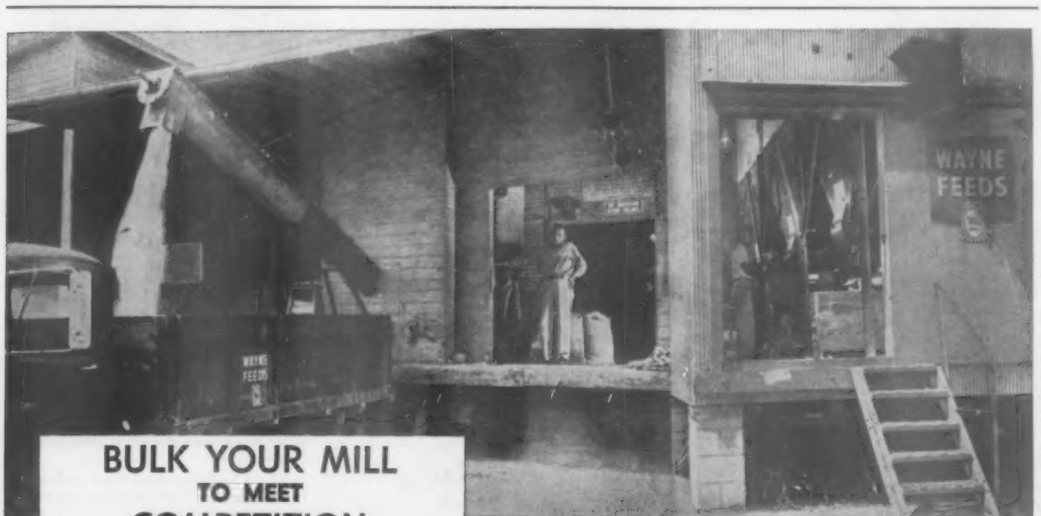
"The farmers have had to put up hard cash, in some cases up to $30,000. The penalty clauses for non-compliance on production contracts run as high as 25%. The contract is for three years.

"In other words, the farmers here had to make great sacrifices even to join this venture. By owning the processing facilities, they move a step closer to the consumer. This is the farmer's way of entering what Ron Goddard, G.L.F. marketing manager, calls 'middle marketing' or processing and wholesale level marketing.

"The significance of this story lies in the fact that the operating company is run by non co-op professionals—the cannery operators who sold their plants to the co-op. They are expected to be as tough with their supplier co-op as they would be with any other supplier. They are expected to be as aggressive in merchandising as they were before they sold their plants. And G.L.F. astutely chose New York state's leading processors for this merger effort.

"Half of the profits of the operating company are returned to the grower co-op.

"This plan, which has been followed by Welch Grapejuice Co., Cal-Can and others, is destined, I think, to put the aggressive cooperatives of America in a new and commanding position. They will remain at arms-



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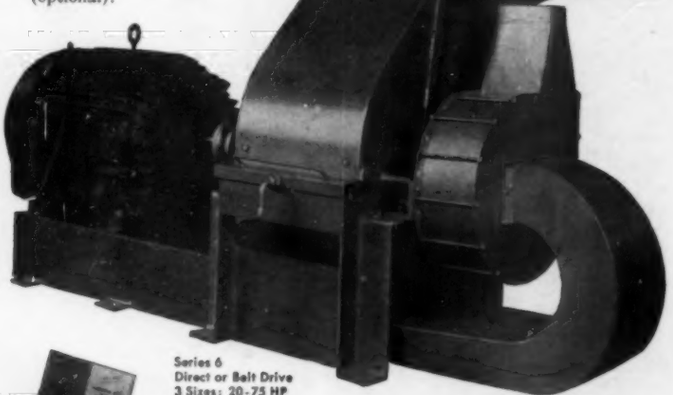

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"A study of this particular set-up, I believe, holds much promise for some of you. You may want to use the cooperative-corporate device yourselves—it appears to me to hold many, many benefits for those who enter it on a purely premeditated basis."

More Autonomy

To the small firm—the operator who is not affiliated with a vertical or cooperative arrangement beyond his own neighborhood—Mr. Haffert remarked:

"Remember, first of all, that even the largest competitors will take on more and more autonomy within your own neighborhood. There will be decentralized control—a lot of flexibility—in how the local manager conducts the competitive battle in your market. . . .

"It has been estimated that direct buying between chains and producers probably will not get beyond 60% of food market needs. That leaves 40% of the market in which you can do a lot of 'in-fighting.'

"About 15-20% of the total market will be represented by restaurants, hospitals, steamship lines, etc.—the so-called 'institutional' market. Your neighborhood stores and specialty shops will always hold at least 10% of the nation's food business. And even the chains will fill 20-30% of their requirements from local purchases-fill-ins, specialty lines in small volume, certain pre-packaged items, etc.

"By doing things a bit differently, a little better, with more of a personal touch, the owner of the small firm definitely can succeed in this 40% sector of the total food market. Don't make the mistake of imitating the big fellow. Do what he can't do as well as you can."

Success of California Egg Promotion Told

ASHLAND, OHIO—California Egg Month was reported to be a success in acquainting consumers with the nutritional benefits derived from eating eggs. The January campaign was spearheaded by the California Egg Council and all segments of the state's egg industry in cooperation with Hess & Clark, manufacturer of nitrofurans and other feed medications, and the Morton Salt Co. Together, they told millions of consumers about the "golden goodness of California fresh eggs."

The month-long activities got underway with an official statement by Gov. Edmund G. Brown saluting the California egg industry. This was followed up on Jan. 4 in Los Angeles and Jan. 5 in San Francisco with kickoff luncheons attended by all facets of the poultry, egg, food and allied industries.

Included in the campaign was a special showing of outdoor billboards which registered more than 31 million impressions.

Point-of-purchase displays were created in more than 3,000 food outlets. Thousands of placemats were delivered by egg industry members to hotels, restaurants and service clubs.

Pillsbury Ad Manager

MINNEAPOLIS — Richard Barrack, formerly assistant advertising manager for Watkins Products, Inc., Winona, Minn., has been named advertising manager of the feed division, The Pillsbury Co.

Mr. Barrack attended Johns Hopkins University, Baltimore, Md., and the Maryland Institute of Art. He has been production manager of Kal, Ehrlich & Merrick, an advertising agency in Washington, D.C., and once worked in sales promotion with Pillsbury's grocery products division.

Lower Mexico Steer Tax Effect Studied

PECOS, TEXAS — Mexico's recent reduction of export taxes on grain-fed steers shipped to the U.S. from approved feeding yards may reduce the market price for similar livestock in this area, according to several West Texas feeders.

The reduction is supposed to stimulate more grain feeding of cattle in Mexico; however, the tax thus far has been applied only to the states of Sonora, Chihuahua, Durango, Nuevo Leon and Pamaulipas, the report says. It will be limited to 10% of the total cattle export quota from each state.

The competition from Mexican cattle had already become widespread, as thousands of cattle have been hauled across the Rio Grande this last year. It is reported that with cheaper grass and labor, the Mexican cattle raisers are finding they can compete quite successfully with ranchers in the U.S.

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Strepcillin F-25 is most effective in stimulating fast, efficient gains because two antibiotics are better than one in protecting animal health. They work together as a disease-fighting team. Penicillin is carried to every part of the system, killing gram-positive germs. Most of the Streptomycin stays in the intestines to kill harmful gram-negative germs found there.

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MORE THAN PRODUCTS—A SYMBOL OF SERVICE

Cereal Chemist's April Meeting Lists Topics For Feed Chemists

DALLAS, TEXAS—Feed chemists will have an opportunity to attend an all-day program designed especially for them during the 46th annual meeting of the American Association of Cereal Chemists, April 9-13, in Dallas, Texas.

Robert C. Wornick of the agricultural research department, Chas. Pfizer & Co., Terre Haute, Ind., and Max L. Cooley, Hoffman-Taff, Inc. Springfield, Mo., are chairmen of the special sessions planned for Tuesday, April 11.

The morning session will include presentations of such papers as: "Biochemical and Biological Measures of the Effect of Pelleting on Starches," "Determination of Supplemental Enzymes in Feed Products," and "Statistics of Distribution of Colored Tracer Particles in Ideal Systems and Feeds."

SAFETY AWARD—Members of the feed mill division of the Fisher Flouring Mills Co., Seattle, Wash., were honored recently at a dinner in the Washington Athletic Club here in recognition of a new safety record. The record was based on completion of 3,000 days without an accident. This was especially noteworthy because operation of heavy equipment is involved in feed production, it was pointed out. Mel Thoman, right, feed mill superintendent, is shown accepting a totem pole memento on behalf of the entire feed mill division from H. B. Rogers, industrial relations director for Fisher's.

The afternoon session will consist of papers such as: "Feed Spoilage and Its Control in Mixed Feeds," "Statistical Quality Control of Feeds," and "Practical Applications and Problems of Feed Nutrition." There will be a total of 12 papers presented.

Several other programs scheduled during the 3½-day meeting will be of interest to feed chemists. One is being held Monday afternoon, April 10, on chemical residues in cereal products. Of particular note in this group will be a paper on "Fungicides on Grains: Food and Drug Administration's Methods and Policies" by Norman E. Foster of the U.S. Food & Drug Administration in Dallas.

A session of seven papers presented under the title of "Chemistry and Technology of Grain" will round out the program of direct interest to feed chemists. Of general interest will be sessions on laboratory layout and laboratory techniques and gadgets.

Registration at the AACC's Dallas meeting is open to all interested persons. The preliminary program containing titles and authors of all technical papers as well as a description of the general program will be sent to persons writing: American Association of Cereal Chemists, 1955 University Ave., St. Paul 4, Minn.

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UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Seasonal Swing in Soybean Meal Prices

Soybean meal prices, like a graceful dancer, manage to provide enough action each year to attract a lot of attention. How will they move from here on? No doubt a lot of action is still in store.

From an over-all supply point of view there should be no actual shortage of soybean meal this season as there has been in some past years. Actually, a new record of processing is possible this year on a per animal unit basis (one unit is about equal to a dairy cow as far as feed use is concerned). Apparently it is being fed at a record rate, but as prices advance, adjustments in feeding rates will occur.

Predicting supplement prices, and being correct while doing it, isn't easy. Each year brings us a new variation in the pattern. On a seasonal basis the high may come early one year and late in the season the next.

Chart for Reference

To give you an idea how prices have changed from one month to another we have prepared the accompanying chart (Exhibit 1). It will look complicated at first glance but once you follow through an illustration you'll find it easy to read. You may want to keep a copy for future use if you buy or sell soybean meal.

Here is how to read the chart: The first column is labeled "Jan. to Feb." You will find a dot above the solid line at the +1 level. This means prices went up $1 ton from January to February in one of the years during the 1930-58 period. Each dot represents one year.

In the March to April column you will find a dot at the —9 level. This means that during one of the years prices went down $9 ton from March to April.

By noting the dots you can get a good over-all picture of month to month changes that have occurred since 1930. The shaded area includes half the years—the middle half. As you can see, some years showed great changes in price from month to month. Many years, however, didn't show a very great change.

Seasonal Chart

In order to show you the average tendency for prices to go up or down during the year, the seasonal chart was prepared (Exhibit 2). It shows soybean meal at a low price during winter and higher during summer. The solid line is the index of seasonal variation which merely is a statistitcal device for putting each year on an even footing. The shaded area includes about 3 out of 5 of the years.

What about from now on? Indications are that there is some remaining strength in the market to give soybean meal a further boost in prices by July. I do not expect a runaway situation after the first part of March, though one could develop. Certainly some adjustment to advancing bean prices is to be expected if those advances continue. This season is beginning to show the earmarks of an "early high" kind of year. If so, prices would likely hold fairly steady after the first of March.

EXHIBIT 1. Monthly Change in Chicago Price of 44% Soybean Meal, 1930-1958
(Each dot represents one year. Half of the dots are in the shaded area.)

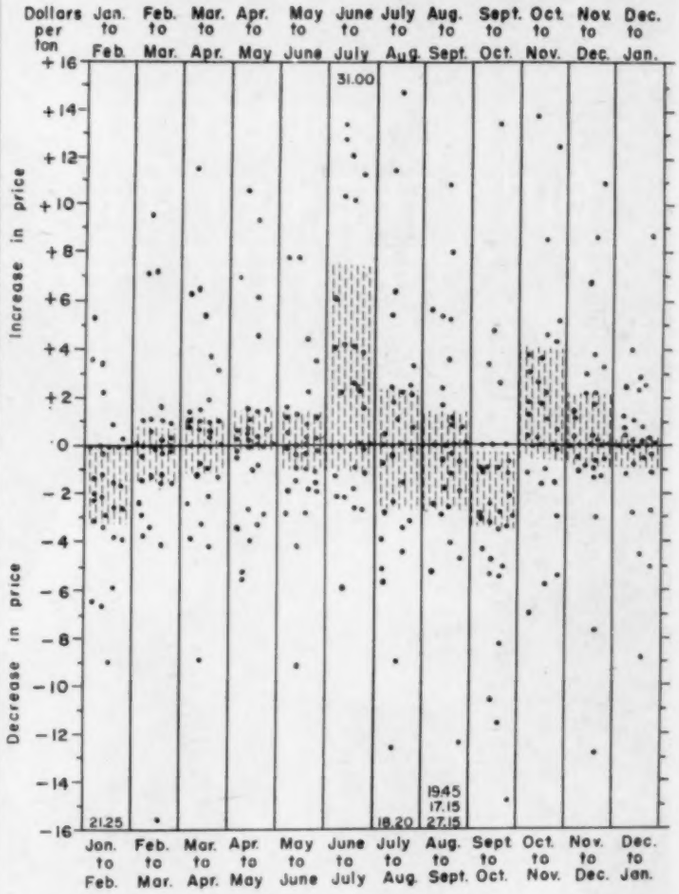
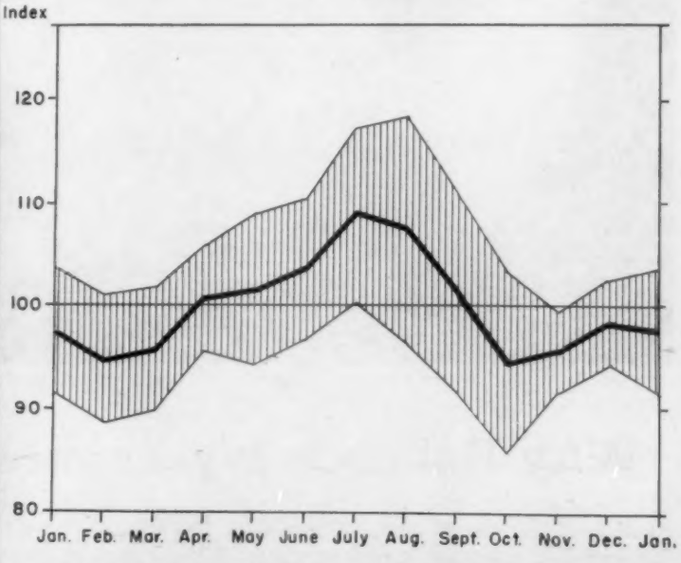


EXHIBIT 2. Index of Seasonal Variation in Chicago Price of 44% Soybean Meal 1947-1956



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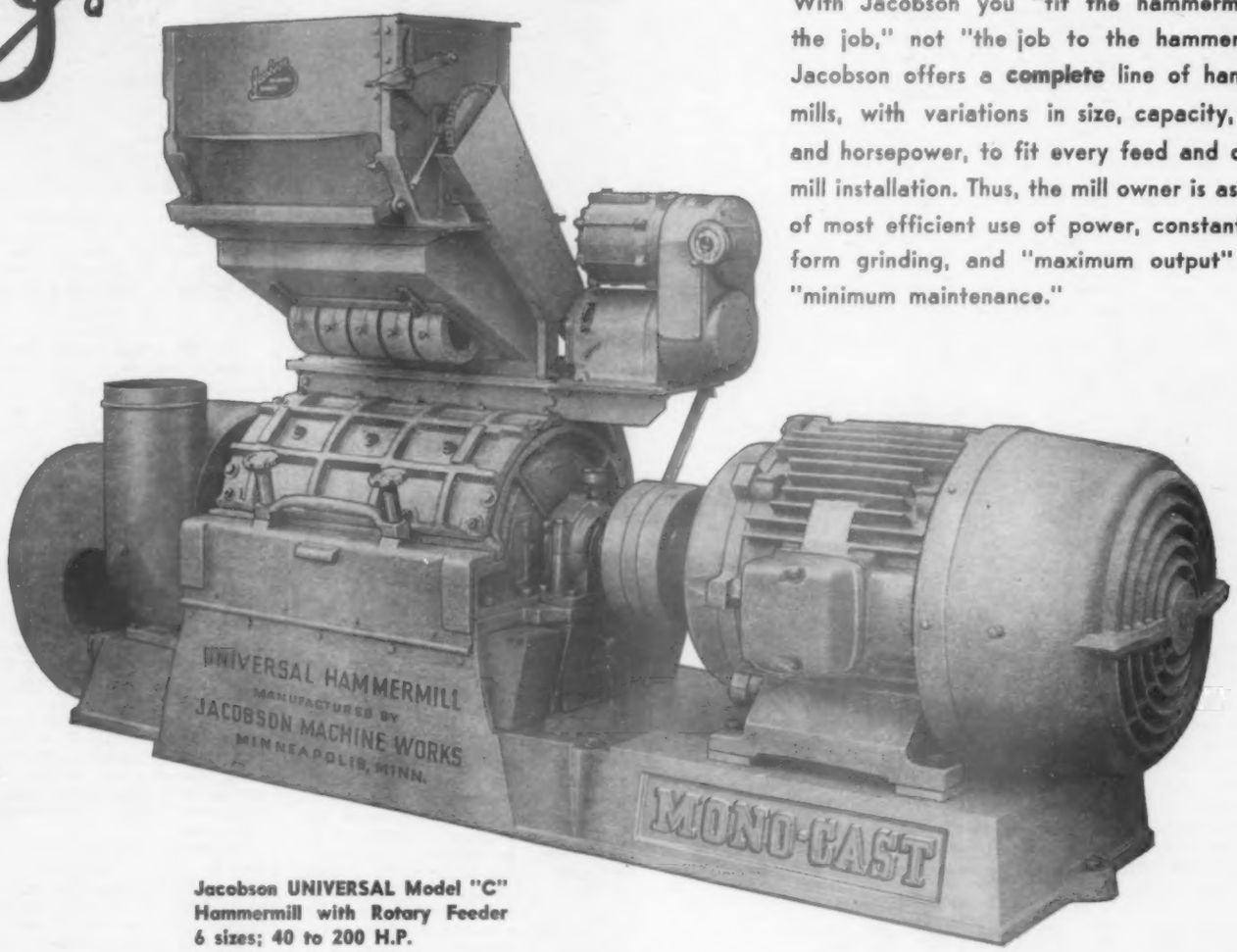

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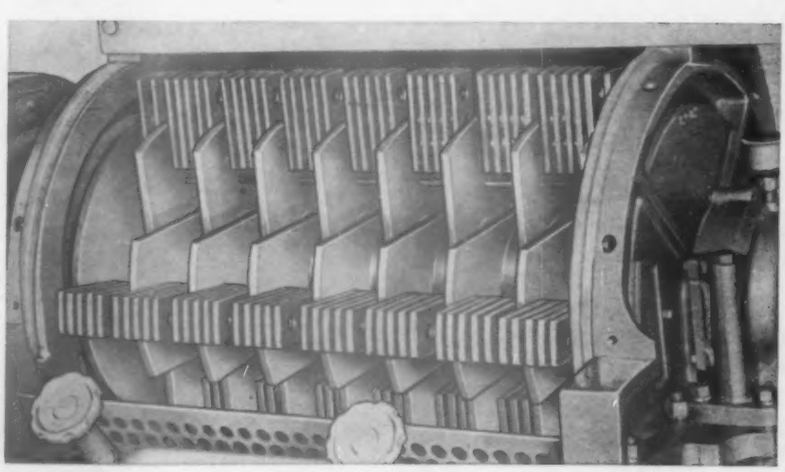

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Speakers at New Mexico Grain, Feed Event Oppose Government Intervention

By Special Correspondent

CLOVIS, N.M. — Speakers at the 15th annual convention of the New Mexico Grain & Feed Dealers Assn. here Feb. 12-13 took a strong stand against government intervention in the farm and business worlds in this country.

Some 45 grain and feed dealers from across New Mexico and Texas attended the two-day conclave and heard addresses by Ben McAlister, president, New Mexico Farm Bureau; Truitt Kennedy, president, Texas Grain & Feed Dealers Assn., and Ray Bowden, executive secretary, Texas Grain & Feed Dealers Assn.

Mr. McAlister kicked off the heated talks, criticizing the federal government in "stepping in and trying to tell the farmers how to run their business."

"The solution of farmers' and grain dealers' problems is not reached by running to the government for help," he said. "We don't think government should guarantee anyone a profit. We feel a man should have the freedom to either make a profit or experience a loss."

Mr. McAlister felt that anytime government guarantees a profit, then the competitive free enterprise system "that made this country great is lost."

He added that grain dealers are at a disadvantage when they have to compete against government. He pointed to a case where government had underbid grain dealers enough that the dealers lost the sale.

TALKING THINGS OVER—Chatting informally at a convention session of the New Mexico Grain & Feed Dealers Assn. in Clovis, N.M., are, left to right: Clarence Worley, Worley Mills, Clovis; R. W. Ludwick, chief deputy, New Mexico Feed and Fertilizer Regulatory Division; Truitt Kennedy, president, Texas Grain & Feed Dealers Assn., and Ben McAlister, president, New Mexico Farm Bureau.

On farmer and grain dealer relationship, Mr. McAlister said the farmers depend "on feed dealers to advise them on current advancements on feed, fertilizers and insecticides."

"We look to you as leaders in the feed industry," Mr. McAlister explained. "You, as feed, grain and fertilizer dealers, have a great responsibility in seeing that the products you're selling are good for the farmers and ranchers."

Again on relations, the Farm Bureau leader said that he foresees a time when the farmer and grain dealer will "unite in a firmer bond" and thanked dealers for their support of the Farm Bureau.

Raps Farm Program

Mr. Kennedy followed Mr. McAlister in a comprehensive talk that tore into a new proposed farm program being framed in Washington, D.C. The new program, according to Mr. Kennedy, is supposedly designed to rid the nation of the growing annual wheat surplus.

"This program would have its biggest impact on the hard red winter wheat growers in this part of the country," Mr. Kennedy said. "It would cut their production down by over 198 million bushels a year for the next five years.

"On the other hand," the Texas feedman continued, "the program would increase production of soft red winter-durum-white wheat by over 47 million bushels a year for the next five years."

Mr. Kennedy added that the program, "designed by Harvard men," would also cut production of hard red spring wheat by 85 million bushels annually for the next five years.

Mr. Kennedy disputed the effectiveness of the program, saying it had a two-fold purpose—one of tightening government's control of the number of bushels and types of wheat produced each year and second of tightening the government's already firm grip on the price control of wheat.

"We can't expect a good farm program to come out of Washington when the ones who design the program are those who have never farmed and who do not realize all the problems faced by a farmer," the Texan said.

Mr. Kennedy continued by saying that the program would give the secretary of agriculture the sole power to determine the quantity of wheat to be produced for domestic consumption and export, would establish a national wheat requirement and give the department of agriculture the power to allocate national wheat requirements among wheat producers.

Taking Man's Freedom

Mr. Bowden, introduced as "an old-timer in feedmen circles all over the country," also directed his address at government control, saying that government is slowly taking away man's freedom and equality.

"The oldest and strongest fear a man has is of his own government," Mr. Bowden said. "A man wants only two basic things—freedom and equality."

Mr. Bowden warned grain dealers

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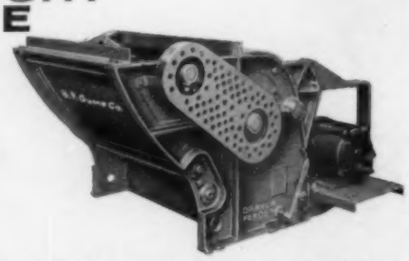

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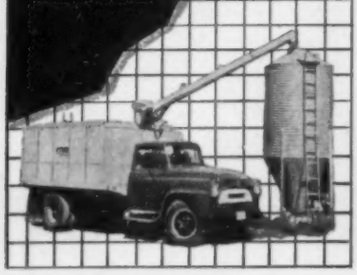

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Chicago 4, Ill.

of future federal legislation, increasing the minimum wage to $1.25 and complained that government is telling businessmen what a worker is worth.

He warned next that the dealers could look for stiffer control by the Food and Drug Administration concerning grain fumigates used in their grain elevators.

"These are the things that can get out of hand," he exclaimed. "We don't want government to tell us what we can or cannot do."

Also speaking at the convention was R. W. Ludwick, chief deputy, New Mexico Feed and Fertilizer Regulatory Division, who outlined changes that will occur if an amended inspection bill passes in the state legislature.

"If passed, the bill would end perpetual registration and all feeds hereafter would have to be re-registered on an annual basis," Mr. Ludwick said.

The bill also would discontinue tax tags. In lieu of this, all feed manufacturers in the state would pay this tax on a quarterly basis.

Another change calls for abandoning the requirement to list the nitrogen free extract on the feedstuffs label. The reason for this change, Mr. Ludwick said, was that nitrogen extract is not determined by chemical analysis but by mathematical deduction.

If the bill becomes law, the manufacturer will have to pay the tonnage tax on the custom made feed as well as on registered feed, Mr. Ludwick said.

Oppose Tax on Feed

Discussed in small gatherings but not in open convention was the association's feeling toward a recent bill introduced in the state legislature which calls for removing feed, fertilizer and grain from the exemption rolls of the 2¢ state sales school tax. The bill was introduced by State Representative Fred Foster, Silver City, N.M., but in the interim, Gov. Edwin L. Mechem has asked the state legislature to increase the sales tax to 3¢ to offset a $1.5 million school fund deficit this fiscal year.

Austin Brooks, El Rancho Milling Co., Clovis, said the association is strongly opposed to the bill introduced by Representative Foster "for simple economic reasons."

Mr. Brooks said that feedmen in eastern New Mexico were particularly opposed because a sales tax on feed would make it harder to compete with Texas dealers who are not faced with any state sales tax.

He stated that feed and grain dealers in the state should ask their state legislators in their respective districts to turn "thumbs down" on the exemption bill.

Officers Elected

In closing convention business, the board of directors elected Clayborn Wayne, Farmers Market & Supply Co., Hatch, as new association president, succeeding Clarence Worley, Worley Mills, Clovis. Elected vice president was Howard Ball, Farmers Market & Supply Co., Silver City. Mr. Ball will also act as temporary secretary of the state association.

New directors named were Mr. Worley; Arthur Ravel, Albuquerque; W. H. Bullock, E. B. Bullock and Sons, Artesia; Winston Lovelace, Pecos Valley Cotton Oil Co., Loving, and Austin Brooks, El Rancho Milling Co., Clovis.

Mr. Worley was selected as a representative to the Southwestern Grain Council comprised of grain dealers from Oklahoma, Texas and New Mexico. The council will meet April 14-15 in Dallas.

Mr. Worley also will attend a March meeting of the Grain and Feed Dealers National Assn. in Washington, D.C. where congressional representatives of grain surplus states will attend as guests.

The new board selected Ruidoso, N.M., as the site for the association's summer convention in July.

Attending the banquet Feb. 12 were some 75 persons who heard W. B. O'Donald, vice president, New Mexico State University, Las Cruces, telling his audience of the financial problems facing New Mexico educators.

G.L.F. Reports Its Feed Tonnage Up 8% from 1959 Period

ITHACA, N.Y.—Cooperative G.L.F. Exchange, Inc., reports that its combined dairy and poultry feed tonnage for the six-month period ending Dec. 31 was up over 8% from the same period of 1959.

The cooperative said that a good part of the increase came during the fall feed program which incorporated the "Profit Feeding Plan."

Volume for the six-month period is slightly below last year but earnings are about equal to last year, according to E. H. Fallon, general manager. He said that "while this was not a banner year for G.L.F., it was a year of steady progress. And, he said that financially the cooperative has never been stronger. He said that members' equity in the exchange, at 68.1%, is the highest in recent years.

Operational report of the firm shows that six-month volume in two of four areas was off slightly. G.L.F. Exchange volume was $78,897,000 as compared with $79,998,000 a year earlier. Service stores volume was $55,952,000 compared with $55,444,000. Petroleum plant volume was $14,760,000, up from $14,581,000. Agent buyers estimated volume was $27,855,000 compared to $28,769,000.

Dairy feed tonnage for the six-month period was up to $278,900 from 239,852 while poultry mash tonnage was down to 142,329 from 157,554. Cases of eggs marketed fell from 437,549 to 323,218. The firm's service tons, including grinding, mixing and lime spreading, however, showed an increase to 1,060,685 from 993,818.

It was also pointed out that the firm's bulk feed shipments made up 34% of all mill tonnage, compared to 28% a year before.

NEW IMPROVED SILO-JOY® HAS EXTRA carotene retaining power

SILO-JOY retains up to 36% more Carotene and 21% more Vitamin E than untreated silage. Laboratory tests prove it. *Antibiotic (Bacitracin) treated silage retains 45% less Carotene than Silo-Joy treated silage and 9% less Carotene than untreated silage.* Check the complete assay report below.

Treatment	Control Untreated Before Ensiling		Silo-Joy 1 lb. per ton		Bacitracin 5 gm per ton		Control Untreated After Ensiling	
Assay for	As is	Dry wt.	As is	Dry wt.	As is	Dry wt.	As is	Dry wt.
Moisture, %	76.62	—	76.26	—	75.06	—	76.87	—
Ash, %	2.09	8.94	2.06	8.67	2.09	8.72	2.08	8.99
Ether, Ext. %	0.77	3.29	0.69	2.90	0.79	3.30	0.85	3.67
Protein, %	6.81	29.12	7.00	29.40	7.31	30.52	6.68	28.88
Fibre, %	4.44	16.99	5.01	21.10	5.55	23.17	5.31	22.95
Carbohydrate, %	9.27	39.64	8.98	37.82	9.20	38.41	8.21	35.49
pH.	5.60	—	5.00	—	5.10	—	5.05	—
Carotene mg/lb. (b. carotene)	16.80	—	10.00	—	5.50	—	6.40	—

Over 50,000 on-the-farm Silo-Joy flavor feeding trials have been conducted through 4,000 County Agents and Vo-Ag Teachers. Actual test results are shown in the chart that follows. Note the percentage of increased palatability.

How Used	% Stating Increased Palatability & Feed Intake	% Stating No Effect
*Silage for Dairy Cattle	95%	5%
**Hay for Dairy Cattle	97%	3%
*Silage for Beef Cattle	92%	8%
**Hay for Beef Cattle	99%	1%

*Grass, Immature Small Grain, Corn and Sorghum Silages.
**Poor Quality Dry Hay. Also Some Other Roughages and Old Grains.

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Topics at ADA Convention Range From Nutrition to Salesmanship

By THOMAS E. LETCH
Feedstuffs Staff

NEW ORLEANS — Topics ranging from nutrition to the need for better selling of dehydrated alfalfa filled the sessions of the American Dehydrators Assn. convention here (Feedstuffs, Feb. 18). Among the speakers were Dr. George O. Kohler, Dr. L. E. Card, Dr. George K. Davis and Charles E. Reed.

Dr. William Luckman, economic entomology section of the Illinois Natural History Survey Division, Urbana, presented the address that was to have been given by Dr. G. C. Decker, head of the section. Dr. Decker was unable to attend because of a death in his family.

Another last-minute substitution had to be made on the program when Dr. G. Herbert True of the Institute of Visual Research was grounded in Omaha by bad weather. James T. Adams, president, Merrett - Adams Training Institute, Inc., Shreveport, La., filled in, giving the dehydrators basic ideas on how to do a better job of selling dehydrated alfalfa.

Dr. Kohler, chief, Field Crops Laboratory, Western Regional Research Laboratory, Albany, Cal., presented a talk on "Coumestrol, an Identified Factor in Forages." (The information presented in this talk appeared in Feedstuffs, Feb. 4.)

In his summary, Dr. Kohler said: "I should like to emphasize that forages are a fertile field for productive basic compositional research. There remains a wide variety of biological effects, apparently due to unidentified constituents in forages. Current research is unraveling the effect of one type of constituent—estrogenic compounds of forages.

"It now appears that we may need two separate types of forages. One of these would be a low-estrogen forage for breeding stock. The second type would be a high estrogen forage for fattening steers, wethers and poultry. Development of a high-standardized-estrogen dehydrated alfalfa might present the dehydration industry with an expanded potential market."

In his presentation, Dr. L. E. Card, who recently retired from the University of Illinois, reviewed the use of dehy in livestock feeding. He pulled together pertinent information previously reported by various research workers and presented it to the dehydrators in a talk that stressed the many selling points of dehy.

Dr. Davis, professor of nutrition and director of nuclear activities at the University of Florida, talked on "Fallout Radioactivity in the Feed Industry." He noted that occasionally some one points a finger of suspicion at the feed and livestock industries as being dangerous sources of radioactivity. Dr. Davis took issue with this and presented data showing that the agricultural community, and especially the feed and livestock industries, "are the strongest defense which we have against accumulation of extra radioactive materials in our bodies."

The Florida speaker said that the amount of radioactive fallout which has resulted from nuclear explosions, and which has shown up in plant materials, is small as compared to the natural radioactivity which exists in these same products. Then he reviewed what actually happens to radioactive isotopes when fallout hits the soil in various parts of the country. He showed data indicating that good fertilizer practice tends to reduce the amount of strontium-90 present in plant products. Since plants will select calcium in preference to strontium, plants grown on soils rich in calcium will have less strontium than those grown on more acid, lower calcium soils.

Dr. Davis further showed that cattle have a metabolic discrimination against strontium in favor of calcium and that, consequently, food of animal origin, coming to the table has, in effect, been screened, and the proportion of radioactive material reduced by a factor of seven, or more, simply because the plant products have passed through an animal in the production of those animal products that are food.

Going further, Dr. Davis said that because milk is a very high calcium food, the human is given a means of discriminating against strontium, and in effect, "milk provides our best protective food item against the accumulation of radioactive strontium-90 coming from a fallout."

Meat, milk and eggs are the first line of dietary defense against the accumulation of radioactive isotopes from fallout, according to the Florida professor. And the feed industry has an additional role in the defense of people against nuclear explosions, he said.

"The feed materials which you keep in inventory are protected against radioactive fallout. They are potential food and feed sources that would not be contaminated and, therefore, would be safe to use in any nuclear emergency.

"Our agricultural surpluses may be a headache, but they are still a wonderful protection against a nuclear disaster," Dr. Davis said.

Discusses Pesticides

"Pesticides — Their Uses, Values and Dangers" was the title of Dr. Decker's talk which was presented by Dr. Luckman.

"The absolute necessity of protecting growing crops and products from serious attack by insects, plant diseases and other pests is recognized as essential from the standpoint of both quantity and quality of the food produced," Dr. Luckman said.

Estimates of the destruction caused by agricultural pests range somewhere between $8 and $15 billion annually, and this despite the widespread use of the best control practices now available, said Dr. Luckman. "Obviously, if all efforts to control pests were to be abandoned in this country, our agricultural lands would soon revert to the conditions that prevailed prior to the advent of the white men. Under those condi-

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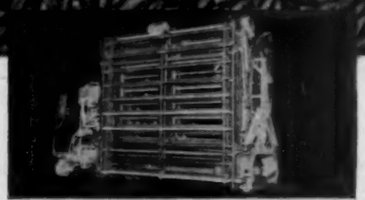
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First flexiveyor wing (on each side) goes down.

First and second flexiveyor wings are down; third being lowered.

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tions, the North American continent supported a human population of about one million souls. If we were to adopt a policy of 'let nature take its course,' as some individuals thoughtlessly advocate, it is possible the experts would find disposing of the 200 million surplus human beings, even more perplexing than the disposition of the infamous wheat surplus."

Dr. Luckman noted that the rise in pesticide usage has been closely associated with and has run parallel to advances in farm mechanization. Thus, in these days of automation and labor-saving devices, many farm managers have come to regard pesticides as chemical tools and they think of them in the same light as mechanical tools.

"Without the benefit of pesticides," Dr. Luckman continued, "the yield of staple fiber, cereal and forage crops could be expected to drop by from 10 to as much as 25%."

Distorted Statements

The Illinois scientist told how publicity seekers and misguided individuals had distorted responsible statements of concern for the public health in over-use of pesticides into a "flood of scare stories." But when the public health aspects were reviewed by several scientific bodies, the general conclusions drawn were: (1) the large-scale usage of pesticides in the manner recommended by manufacturers or competent authorities and consistent with the rules and regulations promulgated under existing laws would not be inconsistent with sound public health programs; and (2) although the careless or unauthorized use of pesticidal chemicals might pose potential hazards requiring further consideration and study, there was no cause for alarm.

"The fact that most insecticides are toxic to man and animals does not necessarily mean that they cannot be used safely," Dr. Luckman continued. "If we develop a proper respect for the toxic properties of a substance, it may frequently be used with greater safety than a much less toxic substance which is apt to be handled carelessly."

Dr. Luckman reviewed the laws that protect the public from irresponsible introduction and use of pesticides. "Before a new pesticide can be placed on the market, the manufacturer must spend approximately $1 million on the research that is required to establish its practical value and safety," he said.

"It is safe to say," he continued, "that when properly used, in full accord with label directions, pesticides present no threat to the safety of the consumer."

But despite these facts, Dr. Luckman said, "we still have a piblic relations problem. Large segments of the public are apprehensive and many individuals are waiting and ready to exploit any mistake we make. Therefore, it is important that every individual in any way associated with pesticide usage understand the basic facts about residues and their implications so that he can help avoid embarrassing incidents and counteract false propaganda."

Production Costs

Charles E. Reed, agricultural economist at Kansas State University, presented material on dehydrated alfalfa production costs based on a survey of 35 plants selected at random in a seven-state area. The plants were stratified into three different sizes: less than 3,000 tons annual production, from 3,000 to 7,000 tons, and over 7,000 tons.

Averages for the three size plants were listed by Mr. Reed as follows:

	Small	Medium	Large
Average production in group (tons)	2,010	4,635	10,191
Average fixed cost (per ton)	$7.63	$5.84	$5.48
Average variable cost	$27.11	$26.95	$21.92
Average total costs	$34.74	$32.79	$27.40

In commenting on the average figures, Mr. Reed told the dehydrators: "You may feel somewhat satisfied if your own cost experience approaches one of the averages depicted here, but your satisfaction should be tempered with the thought that some plants are enjoying a better experience than your own."

Mr. Reed presented figures showing hay costs, over-all labor costs, labor costs by function, gas costs,

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SUMMARIES

(Continued from page 11)

Comparably fertilized corn was ensiled in the early dent stage. However, drouth severely damaged the corn used in Trial 1. Estimated grain yield of corn used in Trials 1 and 2 was 25 and 50 bu. per acre, respectively. Daily dry matter consumption per hundredweight in Trial 1 was 1.73 lb. with corn silage and 1.71 lb. with Coastal Bermuda grass silage. In trial 2 daily dry matter consumption per hundredweight was 14.5% greater with corn silage, 2.05 lb. compared with 1.79 lb.

In Trial 1 feeding corn silage resulted in an increase of 1.54 lb. (6%) in average actual daily milk production over that obtained with Coastal Bermuda grass silage. Though not significant, cows fed Coastal Bermuda grass silage had a tendency to gain more in body weight than cows fed the corn silage. In Trial 2 feeding corn silage resulted in a highly significant increase of 3.80 lb. (14.1%) in average actual daily milk production per cow as compared with Coastal Bermuda grass silage. In this trial corn also gave a highly significant increase in average daily weight gains.

Lusk, J. W., C. B. Browning and J. T. Miles. The Use of a Small Sample In Vivo Cellulose Digestion. Technique for Forage Evaluation. Mississippi.

The comparative apparent digestibility of cellulose of several forages was determined by conventional digestion trials and by three gram samples of forage placed in nylon sacks and suspended in the rumen of cattle. Results of these trials indicate that an estimate of cellulose digestion can be obtained from small sample in vivo technique that approaches the cellulose digestion obtained in conventional methods. These data also indicated that different forages may require differing times as maximum digestion of cellulose in alfalfa was obtained by 36 to 48 hours whereas a 72-hour digestion period was required for Coastal Bermuda hay.

This presents an interesting approach to studying cellulose digestion. It would be much simpler to suspend nylon bags of material through the window of a fistulated animal than to conduct a complex digestion trial if both methods achieve essentially the same results.

Stallcup, O. T., and F. E. Reed. The Total Protein, Casein and Butterfat Content of Colostrum Milk. Arkansas.

Data was presented on the analysis of colostrum milk for the first 10 milkings of 4 breeds of dairy cattle. These data show how milk changes in composition from the first through the tenth milking. Butterfat changes somewhat in that it starts lower and increases. On the other hand protein level is extremely high initially (9.8 to 11.3%), but tapers off rapidly until about the fourth to sixth milking. A part of the increase in percent protein is casein, but the largest percent increase in protein is due to the non-casein portion. The level of non-casein protein at first milking ranged from 6.47% to 7.61% and dropped off to 1.39% to 1.88% by the 10th milking.

Ice Turkey Winner

MINNEAPOLIS — A piece of airplane luggage was awarded to Mrs. Leander M. Corpstein of Caledonia, Minn., after she came within 1 minute, 15 seconds, of guessing the exact melting time of the Hilltop ice turkey that was on display at the Minnesota Turkey Growers Assn. convention here. The hand carved ice turkey was provided by Hilltop Laboratories, Minneapolis.

electricity costs, maintenance and repair costs, fuel and oil costs for the three different size plants, giving the low, the high and the average.

In suggesting ways of cutting costs, Mr. Reed said: "My own particular approach would be to strive for a maximum, continuous flow of product. While operations are going on, push production to the limit of your facilities. It is better, I believe, to operate at or near capacity for five days and then stop, than it is to limp through seven days of production."

In field operations, Mr. Reed outlined a cutting schedule diagram designed to make certain that the drum always has a supply of hay to dehydrate. He also showed how in many smaller plants an improved layout could reduce labor costs.

Turning to the matter of personnel relations, Mr. Reed said, "The time I devote to the subject here falls far short of what its real importance deserves. Employee morale at many dehydrating plants is very low.

"I won't assess the causes for low morale. They will differ from one plant to another. All I can do here is to emphasize the importance of worker morale as it affects the welfare of a concern."

One other suggestion the Kansas State professor offered concerned a possibility for avoiding dew on the alfalfa field (which reduces the hours of cutting time). He noted that dew does not form on cloudy nights because not enough re-radiation takes place to allow cooling to the dew point.

"Clouds, dust particles or other objects coming between the earth's surface and the open atmosphere stop, or at least impede, re-radiation. Smoke, especially heavy smoke, has the same effect. This principle has been used in citrus groves to prevent frost damage. And I believe it can be used by the dehydrating industry to prevent dew formation. The economic feasibility of the idea can be determined by experimentation," he said.

At the new president's luncheon, Clayton Rand, author and publisher from Gulfport, Miss., spoke on "New Frontiers."

Egg Men Concerned Over Higher Feed Costs Under Program

KANSAS CITY—Directors of the National Egg Council have expressed their concern in a letter sent to Secretary of Agriculture Orville Freeman that the administration's proposed feed grain support plan will boost feed prices to egg producers.

The statement said:

"The directors recognize that the administration and the nation have a problem of great magnitude in dealing with the excess stocks of feed grains.

"However, the solution should not be resolved by adding to the problems of the customers of feed grain producers—namely, feeders of livestock and poultry.

"The directors of the National Egg Council ask that before the administration's feed grain program is placed in effect, thorough consideration be given to its effect on the livelihood of egg producers.

"Egg producers currently are committing themselves with respect to the size of the 1961-62 egg laying projects. Once launched, there is no turning back. Higher grain prices which may result from the administration's feed grain program will be paid by egg producers. There is no manner by which they can pass along the extra cost to customers."

A copy of the letter went to Dr. Willard Cochrane, economic advisor to Mr. Freeman and additional copies went to members of the Senate and House Agriculture Committees, the council announced.

Japanese Fat, Tallow Export Agreement Told

SAN FRANCISCO—A new agreement with the All-Japan Feed Manufacturers Assn. has just been concluded which will increase the exportation of fats and tallow as feed additives in that Far Eastern country.

Announcement of the agreement was made by Meyer Sigal, president of the National Renderers Assn., and a vice-president of the G. Bernd Co., Macon, Ga. Mr. Sigal addressed the closing session of the 29th annual convention of the Pacific Coast Renderers Assn. meeting at the Jack Tar Hotel here.

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CAPITAL COMMENT

(Continued from page 14)

tion still emanates from these communities and any damage done to these thousands of rural districts constitutes damage to the whole country."

The national economy: "About 10% of our total population is actually employed on the land. This number, which at one time amounted to 80%, has gradually been reduced as technology has steadily increased the per capita productive capacity.

"However, as the number of persons actually working on the land has been shrinking, the numbers that are engaged in producing farm supplies and transporting, processing and handling commodities has steadily increased.

"So when we consider our agricultural problems we are actually considering the problems of nearly one third of our working force rather than just those of the 10% who work on farms.

"Adjustments in farm production would affect millions of people engaged in producing fertilizers, spray material, automotive equipment, packaging material and a thousand other items of industrial manufacture.

"It would affect those engaged in transportation of all kinds, including ocean shipping, as well as those engaged in milling, packing houses and other processing plants, handling and merchandising and the billion-dollar storage industry.

"When we affect the employment of these people, we also affect their purchasing power and their ability to buy the output of the farm itself. The interests of farm and city people are inextricably interlocked in this respect."

National security: "Wars, hot or cold, are not won by arms alone. Food and fibre supplies are as essential as bombs and rockets.

"The U.S. today has the greatest supply of food available anywhere in the world. In the event of war, we could support our own armed forces. We could feed our civilian population. We could feed and help clothe many other freedom-loving nations of the world.

"No other country in the world is so well prepared to feed and clothe its civilian population and its armed forces in the event of war. This in itself is a strong deterrent against war.

"However slight the possibility of a hot war may be, we are even now in the midst of a cold war the consequences of which could be disastrous.

"Here again, the enormous productive power of American agriculture is one of our strongest bulwarks of defense. . . . Our surpluses have averted famines, prevented inflation and stabilized governments in many countries.

"It is the knowledge that in the U.S. there is food available for any emergency that encourages other countries to fight successfully against the encroachment of totalitarianism.

"The U.S. is strong militarily today, yet all our guided missiles, all our aircraft and all our nuclear submarines would be virtually useless should our agricultural production fail.

"In the interest of national security it is essential that we produce substantially more food and fibre than we need."

International relations: "Last year (1960) we exported about $4.7 billion worth of farm products. Our dollar trade alone amounted to $3.2 billion.

"A large part of our Merchant Marine is engaged in transporting these products.

"We enjoy this enormous foreign market because some two billion

ARE YOU A MOISTURE TESTER TESTER??

Some grain men are moisture tester testers without even knowing it. Most often they're the bargain hunters or gimmick fanciers who always seem to end up with untried and unproven equipment. All too often the things that cost them less to buy end up costing them far more to own.

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No ifs, ands, or buts about it . . . the new Steinlite 500-RC costs you $495 to buy but it pays for you to own one! Write for complete details on this reliable moisture tester and the liberal trade-in allowances being offered for your present equipment.

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people in the world are not self-sufficient and because we produce more than we need.

"It is true that we subsidize the export of some of these commodities in order to meet competitive world market prices. It is also true that if we charged a price comparable to that prevailing in the U.S., plus carrying and handling charges, that our export trade would be far less.

"Subsidization is not necessarily bad, especially when it makes possible a large expansion in our whole economy.

"Should we develop a farm program which would materially decrease our supply and increase costs to foreign buyers, it is a certainty that a great agricultural boom would develop in other parts of the world, notably in Africa and South America and much of our present large export market would be permanently lost."

Our government: "Some proposals have been made which to be effective would require strict controls over every acre of productive land. If we in effect require the licensing of the use of the land is it not just a short step to the licensing of processors, handlers, and even purchasers? Would not price controls be inevitable? How far can we go in regimenting one class of people without eventually requiring similar government controls over all people? . . .

"Many Considerations"

"In pointing out the risks involved by any abrupt changes in our farm programs, I am not undertaking to say there should be no changes at all. I am not saying that there should be no subsidies or that we should immediately abandon all controls over production. . . . I am simply pointing out the many considerations that have to be given such changes and to urge that great caution be used lest we do more harm than good.

"I am very apprehensive over proposals to sharply reduce production. It is entirely possible that an over-all reduction of 10% in farm crops could bring on substantial unemployment and thereby depress markets for all goods including farm commodities. . . .

"Before restricting our over-all productive capacity, I would make every effort to find a sound use for what is now erroneously considered surplus.

"Many millions of Americans still have unbalanced diets. A billion people now furnishing a fertile field for Communist propaganda are actually underfed. We have not yet exhausted all avenues to increased industrial outlets.

"Certainly the farmer needs new legislation. Not legislation that will put him still further under government domination, however, but legislation that will permit him to improve his own income and better serve the consuming public without fear of federal prosecution. . . .

"If we pay more attention to rights and less to compulsion we will be farther along the road to a more prosperous agriculture.

"If we will only regard our production as a bounty rather than a liability we will find that instead of being a cause for worry it is really a reason for much rejoicing."

Abbott Reports Sales Up, Earnings Decline

NORTH CHICAGO, ILL. — Abbott Laboratories' 1960 sales were up 2.7% over 1959, but earnings declined 4.6% according to George R. Cain, president.

Sales rose to $125,968,000 from $122,602,000 in 1959. Earnings were down to $12,385,000 from $12,989,000 in the prior year. The earnings were equivalent after payment of preferred dividends to $3.16 a common share in 1960, compared with $3.32 a share in 1959.

Overseas and chemical business did well, Mr. Cain said. However, domestic results were affected by competitive reductions in antibiotic prices during the summer of 1960 and higher operating costs in such areas as payroll and services.

The company's expenditures for research totaled $8,200,000 in 1960, an increase of about 19% over 1959. Abbott expects to spend more than $9 million on research in 1961, Mr. Cain said.

The Greatest Breakthrough in the Mobile Industry by

CHAMPION

CHAMPION'S new unit powered with a single Diesel engine in the truck chassis cuts operating costs 50% or more! Fuel consumption reported at one gallon or less per ton of processed feed—*including fuel used on the highway!* New design means less maintenance cost—provides more owner profits.

CAPACITY — CLEANLINESS — UNIFORM GRIND AND MIX

POWER—GM 4-53 Diesel Engine. Approved installation by Detroit Diesel in an F-700 Ford chassis.

GRINDER—High-capacity, heavy-duty hammermill. Direct drive from truck Diesel without gears or belts.

FEEDER—Variable-speed 14-ft. drag—swings over 180 degrees. Drag is lifted by mechanized hydraulic power.

MAGNET — Powerful permanent-type magnet. All grain, ear corn and hay is fed over the magnet before entering the grinding chamber.

BELTLESS MIXER—Two- to three-ton mixing capacity. A genuine mixer regardless of the feed ingredients being mixed. The mixer has no drive belts or chains. It is directly-driven with all components hydraulically driven.

DISCHARGE AUGER — Fifteen-foot discharge auger swings 180 degrees and is lifted by mechanized hydraulic power. (Available with 10-ft. extension for reaching extra high bins.)

MOLASSES BLENDER—Molasses is blended and thoroughly mixed in a complete batch. Hydraulic drive actuates blender and pump.

HAY UNIT—Capacity of two to three bales per minute, with a completely clean operation.

CONCENTRATE HOPPERS—A platform hopper for unloading concentrate from the large platform directly into the mixer, and one hopper located at a lower level for ground loading.

OPTIONAL EQUIPMENT AVAILABLE

SHELLER with high discharge for loading cobs directly into truck or trailer.

AIR UNLOADING plus standard auger.

TEN-FOOT EXTENSION for discharge auger.

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TONNAGE

(Continued from page 1)

● Thirty-eight per cent of the commercial feed produced in 1960 was handled in bulk, the AFMA figures show. The bulk percentages ranged from 20% in the east north central states to 60% in the Pacific region.

The source of the data in the AFMA report is the association's feed tonnage reporting service, with 127 reporting companies (18.4 million tons).

Following is information from the AFMA market research bulletin on the 1960 tonnage reports:

Industry Tonnage Down 1% in 1960—The feed industry produced an estimated 39.5 million tons of feed during 1960, based on AFMA's reporting program. Manufacturers indicated a decrease of 1% from the record 40 million tons of '58 and '59.

It appears that production increased above year earlier levels during the last half of 1960 after running below during the first part of the year. Tonnage is expected to increase in 1961 and likely will set a new record.

Production increased more than one third during the past 10 years as indicated by Table 1. Output set a new record in six of the ten years.

W.S.C. and S.A. Up 4%; E.N.C. and New Eng. Down Most—The largest percentage increases in 1960 tonnage occurred in the west south central and south Atlantic regions. Each was 4% above 1959. Production also increased 3% in the east south central region, so each of the southern regions increased. The largest decreases occurred in the east north central and New England regions, which were down 8 and 5%, respectively. (See Table 2 for changes in other regions).

Southeastern tonnage has been increasing faster percentagewise than any other area. Last year was the 12th consecutive year of increase. Five of the 12 years have had increases of 13% or more. Tonnage in the N.Y., N.J., Pa. area declined for the sixth year in the past eight.

Cattle Feeds Up Most; Hog and Egg Feeds Down Most—Cattle tonnage increased most percentagewise with beef and sheep tonnage (reported together) 9% above 1959, and dairy tonnage up 8%. Beef and sheep feed tonnage was the highest on record. Largest percentage declines were recorded by starter-grower egg feeds (—12%) and hog feeds (—9%). (See Table 3 for change in other feeds).

Egg-type chick hatchings are now running well above year ago levels. The USDA has forecast a spring pig crop 5% higher than a year earlier, and hog prices are currently quite favorable to producers. Therefore, it appears that demand will increase in 1961 for the feeds which lagged most last year.

Broiler tonnage in 1960 was 1% below 1959 levels despite an increase in the number raised. Some of this may have been due to more feed formulation by integrated operations producing their own feed, and some may have been due to the use of more concentrates.

Egg feed tonnage decreased as a percentage of the total for the sixth consecutive year.

Poultry Feed More Than Half of Total—The four classes of poultry feed accounted for more than half of the tonnage reported to AFMA last year as indicated by Table 4. Layer-breeder egg feeds accounted for the largest single portion, followed by broiler and dairy.

Sixty-Eight Per Cent Was Complete Feed—Sixty-eight percent of all commercial feed produced in 1960 was complete feed (defined as commercial feed not requiring the addition of grain for feeding). This varied from a low of about 41% in the Corn Belt to a high of 97% in New England and 92% in the Pacific states. (See Table 5 for the percentages in other regions.)

Ninety per cent of starter-grower egg feeds were produced in the form of complete feeds but only 31% of hog and beef and sheep feeds were "complete." (See Table 6 for the percentages for other classes of feed.)

Thirty-Eight Per Cent Was Bulk—Thirty-eight per cent of all commercial feed produced in 1960 was handled in bulk. The Pacific region was highest with 60%. The least amount of bulk handling was in the Corn Belt. The east north central region was 20% bulk and the west north central 25%. (See Table 7 for percentages in other regions.)

TABLE 1. Manufactured Feed Tonnage 1950-60

Year	Million tons	% Change from 1950
1950	29.1	....
1951	32.8	+13
1952	34.4	+18
1953	33.7	+16
1954	35.0	+20
1955	33.6	+15
1956	35.7	+23
1957	36.0	+24
1958	40.0	+37
1959	40.0	+37
1960	39.5	+36

TABLE 2. Percentage Change in Commercial Feed Tonnage Produced in 1960 as Compared with 1959, by Region

Region*	% Change from 1959 %
South Atlantic	+4
West South Central	+4
East South Central	+3
Mountain	+3
Mid-Atlantic	—1
West North Central	—2
Pacific	—2
New England	—5
East North Central	—8
U. S. total	—1

Source: AFMA Feed Tonnage Reporting Service, 127 reporting companies (18.4 million tons).
*Directory of regions:
Pacific—Washington, Oregon, California.
Mountain—Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico.
West North Central—North Dakota, South Dakota, Minnesota, Nebraska, Iowa, Kansas, Missouri.
East North Central—Wisconsin, Michigan, Illinois, Indiana, Ohio.
West South Central—Texas, Oklahoma, Arkansas, Louisiana.
East South Central—Kentucky, Tennessee, Mississippi, Alabama.
South Atlantic—West Virginia, Maryland, Delaware, Virginia, North Carolina, South Carolina, Georgia, Florida.
Mid-Atlantic—New York, Pennsylvania, New Jersey.
New England—Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island.

TABLE 3. Percentage Change in Commercial Feed Tonnage Produced in 1960 as Compared with 1959, by Class of Feed

Class of feed	% Change from 1959 %
Beef and sheep	+9
Dairy	+8
Turkey	+6
Broiler	—1
Layer-breeder egg-type	—4
Hog	—9
Starter-grower egg-type	—12
Miscellaneous	—7
Total	—1

Source: AFMA Feed Tonnage Reporting Service, 127 reporting companies (18.4 million tons).

TABLE 4. Types of Feed as Percentages of Total, 1960

Class of feed	Percentage of total %
Layer-breeder egg-type	24
Broiler	20
Dairy	19
Swine	14
Beef and sheep	9
Starter-grower egg-type	5
Turkey	5
Miscellaneous	4
Total	100

TABLE 5. Percentage of Commercial Feed Produced by Feed Manufacturers as Complete Feed* in 1960, by Region

Region	Complete feed as a percentage of commercial feed %
New England	97
Pacific	92
South Atlantic	84
Mid-Atlantic	83
West South Central	78
East South Central	71
Mountain	62
West North Central	42
East North Central	41
U. S. total	68

Source: AFMA Feed Tonnage Reporting Service, 127 reporting companies (18.4 million tons).
*Commercial feed was divided into two groups for this report: Complete—feeds which do not require additional grain—and concentrates—feeds which should be mixed with grain or fed with grain. Therefore, subtract the complete feed percentages as indicated in the table above from 100% to determine the percentages which were concentrates.

TABLE 6. Percentage of Commercial Feed Produced by Feed Manufacturers as Complete Feed* in 1960, by Class of Feed

Class of feed	Complete feed as a percentage of commercial feed %
Starter-grower egg-type	90
Broiler	81
Turkey	79
Dairy	77
Layer-breeder egg-type	73
Hog	31
Beef and sheep	31
Miscellaneous	93
Total	68

Source: AFMA Feed Tonnage Reporting Service, 127 reporting companies (18.4 million tons).
*Commercial feed was divided into two groups for this report: Complete—feeds which do not require additional grain—and concentrates—feeds which should be mixed with grain or fed with grain. Therefore, subtract the complete feed percentages as indicated in the table above from 100% to determine the percentages which are concentrates.

TABLE 7. Percentage of Commercial Feed That Was Handled in Bulk in 1960

Region*	Percentage bulk, %
Pacific	60
South Atlantic	57
East South Central	55
West South Central	41
Mid-Atlantic	32
Mountain	32
New England	31
West North Central	25
East North Central	20
U. S. total	38

Source: AFMA Feed Tonnage Reporting Service 127 reporting companies (18.4 million tons).

POULTRY LAB

(Continued from page 4)

plete and accurate diagnosis including histopathology. Private conference rooms will be utilized for consulting with visiting growers.

Directing the laboratory will be a qualified veterinarian with extensive experience in poultry diagnostic work, the Pfizer announcement said.

Diagnostic Service

On-the-spot autopsy and diagnosis, followed by prompt prescription of proper medication will be available free of charge five days a week to any grower in Mississippi regardless of size of flock, according to Pfizer spokesmen.

This is the second diagnostic laboratory to be located and equipped by Pfizer in the South. The firm presently maintains a similar free diagnostic service for broiler and egg producers at its laboratory near Cullman, Ala. This facility has operated since late 1959.

BLOAT

(Continued from page 1)

another trace element. Presence of the element greatly increases the need for zinc and may account for reported differences in the availability of zinc from various compounds and ores.

MEMBERSHIP CHARGE UP

CHICAGO—The recent step-up in the volume of futures activity has been reflected in an advance in the demand and prices for membership on the world's largest commodity exchange. A number of memberships were transferred during the week at $6,500.

GRAIN BILL

(Continued from page 1)

Senate takes any action whatever, it is likely to present a bill which resembles nothing like the document prepared for Mr. Freeman by his economic advisor, Willard Cochrane.

In fact, the Cochrane draft has already been gutted of its chief enforcement implement, which provided for sales of feed grains at the market price under certain circumstances. Mr. Freeman previously admitted that this provision was a threat to noncompliers with the voluntary corn-feed grain acreage withdrawal program and that they would be penalized in the open market if they did not cooperate.

This week Mr. Freeman told the Senate group that he had withdrawn that provision, but there are still some vague provisions in the measure which do not clarify the permission of government sale at market price.

Mr. Freeman told the Senators that his major purpose was to use a price payment in kind or cash to get producers to cut back acreage.

As with the House committee, Mr. Freeman met criticism that costs would be extravagantly high. There would be two classes of payment—(1) For a 20% cut in acreage, producers would get a cash payment of 60% of their normal yield times acres removed. Lawmakers seemed to feel that this level was too high. (2) Under the second point, there would be a payment for an additional 20% retirement of feed grain acreage at a rate of 66⅔% in kind or cash, times acreage withdrawn. Again, both houses submitted that this was a big bounty.

Secretary Freeman, a somewhat talkative type, got himself in hot water on various points.

Since presentation of the Cochrane bill, it is significant that Mr. Freeman has steadily given ground under congressional prodding to accept amendments or drop proposals. Most important of these was the plan to dump corn and other feed grains on the market in order to threaten noncooperators in the land withdrawal plan. This week he repeated this, but he failed to say that despite that concession, the bill still retained a provision which would permit him to sell grains back into the market to finance the USDA operations under the program—such sales could still be made, notwithstanding the amending provision made as a concession.

In the bill is a provision authorizing CCC to compensate the government for redemption of cash certificates of cooperators, through sales at market price. The new USDA team failed to disclose that the bill also provides for market sales for compensatory recovery of payments under Plan 2.

This point was not fully disclosed at the Senate session, but Sen. Karl Mundt of South Dakota touched closely on the point in questioning about CCC sale of its stocks in competition with farmers and warehousemen who held grains, possibly obtained at higher prices.

The bill is a broad administrative grant which no Congress has been willing to grant, and it must be doubted that even the Democratically controlled Congress will be willing to give this to Mr. Freeman.

The Cochrane bill means that the government would buy corn at $1.20 bu., sell back some part of it at $1.05 and some other undefined part at the market price at the time. Mr. Freeman believes that under the second part of the land diversion program, some 4 million acres of corn land would be diverted and that this would amount to 200 million bushels. Who knows how much of this bushelage would be redeemed in cash, requiring compensatory dumping of CCC stocks? Mr. Freeman does not.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

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Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7¼¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 31¢ lb.; 300 D, 2,250 A 17½¢ lb.; 300 D, 1,600 A 16¢ lb.; 300 D, 750 A 15½¢ lb.

Boston: Demand and supply steady; 400 D, 3,000 A 19½¢ lb.; 300 D, 3,000 A 19¢; 300 D, 2,250 A 17½¢; 300 D, 1,500 A 16¢; 300 D, 750 A 14¢; 75 D, 750 A 13½¢.

ALFALFA MEAL

St. Louis: Demand slow; trend easy; supply adequate; suncured, 13% fine, sacked $48; dehydrated, 17%, 100,000 A, pellets, demand slow, trend easy, supply ample, bulk $48.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $54.

Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $52@52.60; reground pellets $53.60.

Kansas City: Demand fair; trend steady; supply ample; 17% dehydrated alfalfa, 100,000 A on arrival, pellets $45@48, reground pellets $46.50@49; 18% dehydrated alfalfa, 125,000 A on arrival, pellets $47@51, reground pellets $48@52; 20% dehydrated alfalfa, 160,000 A on arrival, pellets $50@53, reground pellets $51@54; suncured alfalfa, demand slow, supply adequate, 13% pellets $35@37, No. 1 ¼-in. $40, sacked.

Ft. Worth: Demand fair for dehydrated, slow for suncured; supply sufficient; sacked: dehydrated, 17%, 100,000 A $56.10@57.10, truck or rail; suncured: 13% ¼-in. grind No. 1 $47, truck; 15% fine ground, dry $49, with 2% fat added $51, rail or truck.

Buffalo: Demand fair to poor; trend steady; supply fair; $65, sacked, Boston.

Los Angeles: Demand and trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $52@53, nominal; dehydrated pellet meal, 17% protein, 100,000 A $54@56; suncured meal, 15% protein $44@45; suncured crumbles, 15% protein $46@47.

Boston: Demand fair; supply adequate; dehydrated, 17% $63, sacked; suncured 13%, pellets $46.

Chicago: Demand improved; trend higher; supply light; dehydrated, 17% protein, 100,000 units vitamin A $49.50@52.50.

Philadelphia: Demand and supply fair; 17% dehydrated $59.50.

Omaha: Demand fair; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $44; sacked meal $49, Omaha basis.

Minneapolis: Market unchanged; demand fair; supplies ample; 17% dehydrated, 100,000 units vitamin A reground pellets $51, delivered Minneapolis; oiled reground pellets $53.

ANIMAL FAT (STABILIZED)

Chicago: Demand good; trend steady; supply moderate; tank truck or carlots, bleachable fancy tallow $7 cwt., yellow grease $6.12½ cwt.

Boston: Demand fair; supply ample; tallow 6¾¢ lb.; yellow grease 5¾¢ lb.

Louisville: Demand good; trend steady; supply ample; bleachable white 6¾¢ lb.; white tallow 6¾¢ lb.; yellow grease 6¼¢ lb.; all in tanks.

Ft. Worth: Demand excellent; supply tight; prime tallow, tank cars 7¢ lb., drums 8¼¢ lb., f.o.b. north Texas packing plants, with returnable drums.

Kansas City: Demand good; trend firm; supply available; stabilized prime tallow 6¾@6½¢ lb.

St. Paul: This market is the highest it's been since before 1959; gain of 1½¢ lb. has come about in 5-6 weeks; latest quote for bleachable fancy of 7¢ lb., f.o.b. producer's plant, is up ¼¢ from a week ago.

BARLEY FEED

Los Angeles: Demand fair; trend firm; supply adequate; standard rolled $3.05 cwt., standard ground $3.05 cwt., both sacked.

Boston: Demand and supply light; $45.50, sacked.

Baltimore: Demand slow; trend lower; supply adequate; $44.50, sacked.

Chicago: Demand quiet; trend easier; supply ample; $34, sacked.

Philadelphia: Demand slow; supply fair; $42.50.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31.50, less than carlots $40.

Chicago: Demand fair; supply ample; trend steady; f.o.b. Wyoming and South Dakota shipping points: 200 mesh $14 and net $13.75; fine granular (80 to 100 mesh) $14.25 and net $14; granular, 30 mesh $16.50 and net $16.25.

BLOOD FLOUR

Louisville: Demand slow; trend steady; supply good; $92.50@97.50, sacked.

BLOOD MEAL

Los Angeles: Demand slow; trend unchanged; supply adequate; $5.50 a unit of ammonia, sacked.

Chicago: Demand quiet; trend steady; supply fair; 80% protein $127.50, sacked.

Louisville: Demand slow; trend firm; supply good; $92.50@97.50, sacked.

Omaha: Demand good; trend strong; supply very short; 80% $115, sacked, Omaha.

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

BONE MEAL (STEAMED)

Ft. Worth: Demand fair; supply sufficient; $100, sacked, f.o.b. Ft. Worth, local manufacture.

Buffalo: Demand fair; trend strong; supply light; $105, sacked.

Boston: Demand and supply steady; $100.

Chicago: Demand and supply fair; trend firm; $97.50, sacked.

Los Angeles: Demand fair; trend steady; supply ample; imported $80.75, 20 ton lots, sacked.

Cincinnati: Demand good; trend steady; supply ample; $105, sacked, Cincinnati.

Louisville: Demand dull; trend steady; supply light; $100@105, sacked.

BREWERS DRIED GRAINS

Ft. Worth: Demand slow; supply sufficient; 26% protein $63.40, sacked.

Buffalo: Demand fair; trend lower; supply good; $57, Boston.

Boston: Demand good; supply short; 22% $62, 26% $65.10, sacked.

Chicago: Demand slow; trend lower; supply ample; 26% protein $44.50.

Los Angeles: Demand good; trend steady; supply limited; $51.50.

Philadelphia: Demand and supply fair; $58.50.

St. Louis: Demand slow; trend easy; supply ample; $48.

Cincinnati: Demand poor; trend steady; supply adequate; $51.

Louisville: Demand fair; trend steady; supply good; $56, sacked.

BREWERS DRIED YEAST

Cincinnati: Carlots 11¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12½¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12½¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9¾¢ lb.; 10 ton lots 10¢ lb.; 5 ton lots 10½¢ lb.; ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

Buffalo: Demand good; trend steady; supply ample; $8.75 cwt.

Los Angeles: Demand good; trend steady; supply limited; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

Boston: Demand and supply steady; 11¢ lb.

Omaha: Demand good; trend improving; supply fair; 10¢ lb.

Louisville: Demand fair; trend steady; supply good; 10@10½¢ lb., sacked.

BUTTERMILK (CONDENSED)

Chicago: Demand slow; trend steady; supply ample; 500 lb. barrels $3.05@3.25 cwt.

Boston: Demand steady; supply light; 4¼¢ lb.

Los Angeles: Demand slow; trend steady; supply adequate; 5⅜¢ lb., 100 lb. lots; 4½¢ lb., 500 lb. lots; both in barrels.

Philadelphia: Demand slow; supply fair; $4.25 cwt.

Louisville: Demand dull; trend steady; supply nil; $4@4.25 cwt., in paper drums of 500 lb.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N. J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $13.75; 100 lb. bags $13; bulk, boxcar $11.50; bulk, hopper $11; coarse grind $1 premium, delivered Minneapolis.

Los Angeles: Demand fair; trend steady; supply adequate; flour $9.85, 20 ton cars; meal $10.20, 20 ton cars; both sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

CHARCOAL

Los Angeles: Demand slow; trend unchanged; supply adequate; hardwood poultry: $156, less than ton lots; $144.40, ton lots; both sacked.

Chicago: Demand fair; trend firm; supply fair; 50 lb. multiwalls $110.

Boston: Demand quiet; supply light; granular No. 6 $110.

COCONUT OIL MEAL

Los Angeles: Demand steady; supply ample; copra cake $63.

COD LIVER OIL (FORTIFIED)

Boston: Demand and supply steady; 300 D, 3,000 A 20¢ lb.; 600 D, 2,250 A 18½¢; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16½¢.

CONDENSED FISH SOLUBLES

Los Angeles: Demand good; trend steady; supply limited; 2½¢ lb.

Boston: Demand quiet; supply ample; $37.50@40.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $6 more)

Minneapolis: Feed $53.60, meal $72.60.
Atlanta: Feed $57, meal $76.
Birmingham: Feed $55.80, meal $74.60.
Boston: Feed $58.50, meal $77.50.
Chicago: Feed $47, meal $66.
Cleveland: Feed $54.90, meal $73.90.
Denver: Feed $57.20, meal $76.20.
Ft. Worth: Feed $55.70, meal $74.70.
Indianapolis: Feed $52.20, meal $71.20.
Kansas City: Feed $47, meal $56.
Louisville: Feed $52.60, meal $72.60.
New Orleans: Feed $56.90, meal $75.90.
New York: Feed $58.10, meal $77.10.
Norfolk: Feed $57.50, meal $76.50.
Philadelphia: Feed $57.80, meal $76.80.
St. Louis: Feed $47, meal $56.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $50.

Louisville: Demand very dull; trend steady; supply light; $57.65, sacked.

COTTONSEED OIL MEAL

Chicago: Demand fair; trend higher; supply ample; Memphis basis: hydraulic $53.50, solvent $54.50.

Cincinnati: Demand poor; trend steady; supply adequate; $59.

Boston: Demand fair; supply ample; $72.80, sacked.

Ft. Worth: Demand fair for old process, poor for solvent; supply sufficient; 41% old process $62@63, f.o.b. mills Ft. Worth; carlots, solvent 2% fat added $56@57, delivered Ft. Worth; pellets $2 additional, hulls $23.

Buffalo: Demand and supply fair; trend steady; $74, sacked, Boston.

Kansas City: Demand improved; trend steady to stronger; supply adequate; 41% old process or solvent $52.50@53, Memphis.

Memphis: Demand fair; trend steady to higher; supply ample; prime 41% protein, old process $51.50; new process, 41% protein $51.

Los Angeles: Demand good; trend steady; supply adequate; $55@57.

St. Louis: Demand fair; trend steady; supply ample; solvent $56.

Wichita: Demand fair; supply ample; 41% old process $69, sacked.

Omaha: Demand good; trend strong; supply ample; 41% solvent $60.40, delivered Omaha.

Philadelphia: Demand and supply fair; trend unsettled; $67.50, 30 ton cars.

Louisville: Demand fair; trend easy; supply normal; $61.10 for old or new process, sacked.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $43.50 sacked, $40.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

Kansas City: Demand fair; trend steady; supply ample; 1,500 ICU 9¾¢ lb.; 3,000 ICU 11¢ lb.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $61.25, sacked, 100 lb. multiwall bags, bulk $58.25; truck load $62, sacked, in 100 lb. multiwall bags, bulk $59, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $52, f.o.b. Tupelo in 100 lb. multiwall bags, $49 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 38%, maximum fluorine .18% $66 (or $3.67 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18% $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .10% $69.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $66.35 bulk ($3.65 per unit of P).

Cincinnati: 18% phosphorus, carlots $74.30, ton lots $84.30; 14% phosphorus, carlots $62.50, ton lots $72.50, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $33, bulk, boxcar/hopper car; $56, bagged, in carloads or truck loads; $96, bagged, in less than carload lots; 21% P, $94.05, bulk, boxcar/hopper car; $97.65, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk, carlots and truck loads, 18½% phosphate $75 and 21% phosphate $89; packed in 100 lb. papers, 10 tons or more, 18½% phosphate $81 and 21% $92; lesser quantities, 18½% phosphate $91 and 21% $102; above prices, per ton, f.o.b. Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $81 (or $4.38 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $81, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 29%, maximum calcium 33%, maximum fluorine .12%; carload and truck load $75.50, sacked in 100 lb. multiwall bags, bulk $72.50, f.o.b. Texas City.

Cincinnati: 18½% phosphorus $88.80, bagged in carloads; $96.70, bagged in ton lots, f.o.b. Cincinnati; $81, f.o.b. producing points.

DISTILLERS DRIED GRAINS

Cincinnati: Demand fair; trend steady; supply adequate; $56.

Buffalo: Demand good; trend steady; supply fair; $71, Boston.

Boston: Demand active; supply scarce; dark $77, sacked.

Philadelphia: Demand slow; supply light; trend unsettled; $73.50.

Louisville: Demand fair; trend strong; supply improving; bourbon grains: light $66, up $2; dark $67, up $2; solubles $73, steady; all sacked.

DRIED BEET PULP

Buffalo: Demand fair; trend steady; supply adequate; $61.50, sacked, Boston.

Ft. Worth: Demand slow; offerings light; plain $60, sacked, 50 lb. bags.

Los Angeles: Demand good; trend steady; supply limited; $49.90.

Boston: Demand fair; supply ample; $60.50, sacked.

DRIED BUTTERMILK

Boston: Demand quiet; supply scarce; 14¢ lb., nominal.

Chicago: Demand and supply fair; trend easier; medium acid $10.75@11 cwt., sweet cream $10.75@11 cwt., both sacked.

Los Angeles: Demand fair; trend steady; supply ample; 13¾@14¢ lb., sacked.

Buffalo: Demand fair; trend steady; supply short; $11.30 cwt.

Louisville: Demand slow; trend steady; supply normal; 12@12½¢ lb., sacked.

DRIED CITRUS PULP

Los Angeles: Lemon pulp $41, nominal.

Buffalo: Demand fair to poor; trend steady; supply adequate; $40.50, sacked, f.o.b. Florida points.

Boston: Demand slow; supply adequate; $40, sacked, f.o.b. Florida.

DRIED SKIM MILK

Chicago: Demand and supply fair; trend easier; $10.50@11 cwt., sacked.

Buffalo: Demand good; trend steady; supply fair; spray $11.85 cwt.

Los Angeles: Demand slow; trend steady; supply adequate; 15¢ lb., less than ton lots; 14¾¢ lb., ton lots; both sacked.

Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.

Boston: Demand and supply good; 12¢ lb.

Louisville: Demand fair; trend steady; supply normal; 12@12½¢ lb., sacked.

Philadelphia: Demand slow; supply fair; $13 cwt.

Omaha: Demand good; trend strong; supply fair; 12¢ lb.

Minneapolis: Steady to 25¢ lower at $11.50@11.75 cwt.

DRIED WHEY

Boston: Demand and supply good; 5¼@5½¢ lb.

Chicago: Demand quiet; trend firm; supply fair; $4.75@4.85 cwt., sacked.

Ft. Worth: Demand fair; supply adequate; carlots, standard $5 cwt., sacked, delivered Ft. Worth; ton lots $5.25 cwt., f.o.b. warehouse Ft. Worth.

Los Angeles: Demand fair; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l.; both sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.

Philadelphia: Demand slow; supply fair; $6.25 cwt.

Omaha: Demand and trend good; supply fair; $5.50 cwt.

Louisville: Demand fair; trend steady; supply normal; 5¾@6¢ lb., sacked.

Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $5.25 cwt., sacked.

Minneapolis: Supplies pressing on market; demand slower; price decline of 10¢ cwt. during week; Feb. 23 quote: $5.05 cwt.

FEATHER MEAL (HYDROLYZED)

Ft. Worth: Demand slow; supply sufficient; 85% protein $65@67.50 bulk, $67.50@70 sacked, delivered Ft. Worth.

Los Angeles: Demand good; trend steady; supply adequate; 90¢ a unit of protein, sacked.

Boston: Demand slow; supply improved; $67, f.o.b. shipping point.

FISH MEAL

Boston: Demand good; supply fair; 60% $95.

Los Angeles: Demand good; supply very tight; local production, 60% protein $1.45 a unit, nominal, sacked.

Omaha: Demand good; trend strong; supply fair; 60% menhaden $116, f.o.b. Omaha.

Ft. Worth: Demand good; supply sufficient for nearby requirements; sacked: 65% protein Peruvian $100, 60% protein menhaden $103, delivered Ft. Worth.

Buffalo: Demand improved; trend very firm; supply limited; 60% protein menhaden $107.50 bulk, $112.50 sacked.

Chicago: Demand improved; supply light; trend higher; sacked: menhaden, East Coast $92@95, Gulf $92@95; menhaden scrap, East Coast $88@91, Gulf $88@91; Canadian herring meal $1.45 a unit of protein.

Cincinnati: Demand fair; trend steady; supply adequate; $98.70.

Louisville: Demand slow; trend steady; supply light; $100@105, sacked.

Minneapolis: Fair demand and dwindling supplies pushed Canadian herring up 5¢ unit from last week to $1.40 for March, West Coast, subject to production, $1.45 for April-July; 60% West Coast blended steady at $118, sacked, delivered.

HAY

Philadelphia: Demand slow; supply light; $25.50.

Los Angeles: Demand slow; trend easier; supply ample; U.S. No. 1 $30@32; U.S. No. 2 leafy $28@29; U.S. No. 2 green $28@29; U.S. No. 2 $26@27.

Boston: Demand and supply steady; No. 2 timothy $39@41.

Ft. Worth: Demand slow; offerings limited; carlots, baled, No. 1 alfalfa $40@44; No. 2 $38@42, delivered Texas common points.

Wichita: Demand good; supply sufficient; prairie $24@27, alfalfa $32@34, baled.

Cincinnati: Demand poor; trend steady; supply adequate; second cutting alfalfa $35; No. 1 timothy $25; red clover $30; No. 1 timothy and clover mixed $30; straw $12.

Louisville: Demand dull; trend steady; supply ample; local hay, any variety, No. 1 $30, No. 2 $28; lespedeza $23@25; straw $18@20.

HOMINY FEED

Buffalo: Demand fair; trend steady to lower; supply adequate; $50.50, Boston.

Kansas City: Demand slow; trend steady; supply ample; yellow hominy feed $34@34.50.

Memphis: Demand poor; trend steady; supply ample; white $41.80, yellow $41.80.

Chicago: Demand quiet; trend steady; supply fair; $40.50.

St. Louis: Demand slow; trend easy; supply ample; yellow $39.50.

Cincinnati: Demand poor; trend steady; supply adequate; $44.

Boston: Demand slow; supply ample; $50.50.

Louisville: Demand slow; trend strong; supply light; $47.50, sacked.

LINSEED OIL MEAL

Boston: Demand and supply light; 34% $73.20; old process 32% $79.20.

Ft. Worth: Demand slow; supply sufficient; 34% protein, extracted $72.70 February, $73.20 March-April.

Chicago: Demand improved; trend strong; supply fair; Minneapolis basis: solvent $56@57, expeller $61.50.

Kansas City: Demand fair; trend stronger; supply adequate; 34% solvent process $56@56.50, old process $61@61.50, Minneapolis.

Wichita: Demand fair; supply ample; 34% $75, sacked.

Los Angeles: Demand fair; trend steady; supply ample; local production, 31% protein $71.

Cincinnati: Demand poor; trend steady; supply adequate; new process $56, old process $61.50, Minneapolis.

Philadelphia: Demand and supply fair; 34% $74.

Omaha: Demand fair; trend steady; supply ample; 34% solvent $61.90; 32% old process $67.40, Omaha basis.

Louisville: Demand fair; trend strong; supply normal; old process $76.90, up $2.90; new process $74.40, up $2.40, both sacked.

Minneapolis: 34% solvent up $1 to $57; 32% expeller up 50¢ to $62.

LIVER AND GLANDULAR MEAL

Omaha: Demand and trend fair; supply plentiful; 65% $165, sacked, Omaha.

MALT SPROUTS

Chicago: Demand light; trend easier; supply adequate; No. 1 $42.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $47.

Boston: Demand and supply limited; $48, nominal.

MEAT AND BONE MEAL

Kansas City: Demand good; trend firm; supply tight; 50% $90.

Chicago: Demand moderate; trend unchanged; supply fair; 50% protein $92.50, sacked.

Ft. Worth: Demand good; supply light; meat and bone, 50% $85 bulk, $87.50 sacked, f.o.b. Ft. Worth.

Buffalo: Demand good; trend very firm; supply light; 50% meat scrap $90 bulk, $95 sacked.

Wichita: Demand heavy; supply insufficient; 50% $92.50, sacked, f.o.b. plant.

Los Angeles: Demand excellent; trend firmer; supply limited; 50% protein $1.70 a unit.

Cincinnati: Demand good; trend steady; supply fair; 50% meat and bone scrape $86, Cincinnati.

St. Louis: Demand good; trend strong; supply light; $92.50.

Boston: Demand good; supply steady; $1.35 a protein unit; converted 50% $80.

Louisville: Demand slow; trend steady; supply good; $87.50@92.50, sacked.

St. Paul: Demand good; supply adequate; price up $2@3 from last week to $95@98, sacked.

MILLFEED

Kansas City: Demand slow; trend steady; supply ample; sacked bran $36@36.50; bulk bran $30@30.50; sacked shorts $34.50@35, bulk shorts $29.50@30, bulk middlings $29.50@30.

Wichita: Demand good for bran, fair for shorts; supply adequate; basis Kansas City: bran $36.25@36.75, shorts $35.25@35.75, sacked; bran declined $1 and shorts $2, compared with the preceding week; bulk middlings $30@30.50, off $1.50, with demand fair.

Ft. Worth: Demand good; supplies tightening; bran, bulk $39, burlaps $44; gray shorts, bulk $38.50, burlaps $43.50; bulk middlings $38.50, delivered Texas common points; $1.50 lower on bulk bran, shorts and middlings; $1 lower on sacked bran and shorts than previous week.

Omaha: Demand slow; trend easy; supply ample; sacked bran $37, sacked gray shorts $36, bulk standard midds. $31, all Omaha basis.

Chicago: Demand quiet; trend easier; supply ample; standard bran $37, standard midds. $35.50, red dog $37.50@38.

St. Louis: Demand slow; trend easy; supply ample; sacked, bran $41.50, shorts $40; bulk, bran $35, middlings $34.50.

Cincinnati: Demand fair; trend lower; supply adequate; bran $43@45, middlings $41@43.

Boston: Demand slow; supply fair; bran $49.10, middlings $47.60.

Buffalo: Sales were still a hit-and-miss affair last week; country trade was good because of low inventories; but large mixers were inclined to dicker for a deal and were in no rush to replenish supplies; it was still a bran market because of the time of the year; local levels were even to within 50¢ of western competition; sacked differential on bran and middlings held steady at $7; bulk and sacked bran ended unchanged; bulk and sacked middlings were unchanged to up 50¢; red dog, bulk and sacked, was unchanged to $1 higher; quotations Feb. 21: bulk bran $40@41, sacked $47@50; bulk middlings $37.50@39, sacked $44.50@49; bulk red dog $38.50@41.50, sacked $45.50@48.

Philadelphia: Demand and supply fair; trend very unsettled; bran $50, standard midds. $52, red dog $54.

Memphis: Demand fair; trend weak; supply ample; wheat bran $37.80, gray shorts $37.80, standard midds. $37.30.

Louisville: Demand slow; trend weak; supply good; bran $46.30, down $1; mixed feed $46.30, down $3.50; shorts $46.80, down $2; all sacked.

Los Angeles: Demand slow; trend easier; supply ample; standard millrun $45@45.50, red bran $49@50.

MINERAL FEED

Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Ft. Worth: Demand good; supply adequate; all-purpose granules $85, block $95; mineral phosphorus granules $106, block $113; cattle-sheep mineral, 7% phosphorus granules $97, block $105; hog mineral phosphorus 3½% granules $87, phosphorus 2% $72 (all in 50 lb. paper bags).

Wichita: Demand heavy; supply sufficient; all-purpose with iodine 50 lb. blocks $97.50, 100 lb. bags $92.50, f.o.b. plant.

MOLASSES

Memphis: Demand fair; trend steady to higher; supply ample; blackstrap 13@13¼¢ gal., tank car, f.o.b. New Orleans and $30 ton delivered Memphis, truck.

Ft. Worth: Demand fair; supply sufficient; blackstrap 13¼¢ gal., Houston; truck $29.35, delivered Ft. Worth, seller's market price on date of shipment.

Cincinnati: Demand fair; trend steady; supply adequate; 13¼¢ gal., New Orleans.

Los Angeles: Demand good; trend firmer; supply adequate; $25.50, f.o.b. tank cars; $26.75, f.o.b. tank trucks.

Kansas City: Demand slow; trend firm; supply ample; blackstrap 13@13¼¢ gal., f.o.b. New Orleans.

Boston: Demand steady; supply ample; 16¼¢ gal. in tank cars.

Buffalo: Demand fair; trend steady; supply adequate; 16¼¢ gal., f.o.b. Albany.

St. Louis: Demand fair; trend steady; supply ample; 13¢ gal., tank car, New Orleans.

Louisville: Demand fair; trend steady; supply normal; 15¢ gal., tank car lots, Gulf ports.

Minneapolis: Market steady; blackstrap $35, tank truck, delivered; beet $30, blend $31.50.

OAT PRODUCTS

Boston: Demand and supply steady; white pulverized $54.50; reground oat feed $26.50, both sacked.

Ft. Worth: Demand slow; supply sufficient; 10% protein oat millfeed $42.20, reground $26.30, sacked.

Los Angeles: Demand slow; trend unchanged; supply adequate; local production, pulverized $66, sacked.

Chicago: Demand moderate; trend irregular; supply ample; reground oat feed $12@12.50; No. 1 fine ground feeding oatmeal $67; feeding rolled oats $71.

Philadelphia: Pulverized white, demand slow, supply fair $48.50; domestic, demand slow, supply light $25.50; Canadian oat feed, demand fair, supply light $31, sacked, nominal.

Cincinnati: Demand poor; trend steady; supply adequate; unground grain screenings $24@25.

Memphis: Demand poor; trend weak; supply ample; 3½% protein reground oat feed $24.

Louisville: Demand fair; trend easy; supply normal; reground $23.40, rolled $79.90, feeding $74.40, pulverized $50.40, crimped $63.90, all sacked.

Minneapolis: No change in market from last week; sacked, pulverized $41.50; sacked feeding rolled $74; sacked feeding oatmeal $62; sacked crimped $58.50; sacked reground oat feed $24.

OYSTER SHELL

Los Angeles: Demand fair; trend steady; supply ample; $15.40, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; 80 lb. bags $23.85, 50 lb. bags $24.10, 25 lb. bags $26.35.

Boston: Demand and supply steady; in paper $26.52.

Louisville: Demand good; trend steady; supply normal; in 80 lb. paper bags $23.95, 50 lb. paper bags $24.20, 25 lb. paper bags $26.45.

PEAT MOSS

Boston: Demand and supply steady; $3.15 a bale in carlots.

Cincinnati: Demand and supply good; trend steady; truck loads $3.45 a bale, f.o.b. Cincinnati.

Chicago: Demand and supply fair; trend firm; standard 7⅛ cu. ft. bale $3.80.

Los Angeles: Demand fair; trend steady; supply nominal; Canadian 5.6 cu. ft. bales $3.65.

Philadelphia: Demand good; supply light; $3 a bale, f.o.b. pier.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.50, 200 lb. in 100 lb. drums $1.50, 100 lb. drums $1.51, 25 lb. drums $1.53, f.o.b. Cincinnati.

Chittenango, N.Y.: Demand good; trend firm; supply adequate; standard trace mineral blends, 90% U.S.P. K.I. and 10% calcium stearate, magnesium carbonate or calcium hydroxide: 100 lb. drums $1.42 lb.; 200 lb. and up $1.40 lb., delivered basis.

POULTRY BY-PRODUCTS

Ft. Worth: Demand good; supply limited; $90@92, nominal, sacked, f.o.b. north Texas plant.

Los Angeles: Demand good; trend firmer; supply adequate; $1.50 a unit of protein, sacked.

Boston: Demand good; supply tight; $87@88, sacked.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplement) 4¢ gm. in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand good; supply very scarce; rice bran $37@38, f.o.b. south Texas rice mills, sacked; hulls $4.50, sacked.

Los Angeles: Demand and supply limited; trend steady; California production, high fat content, bran $52.50, sacked.

SCREENINGS

Cincinnati: Demand fair; trend steady; supply adequate; unground grain screenings $24@25.

Buffalo: Demand and supply fair; trend steady to lower; ground, sacked $35.25, New York; unground, bulk $30.25, New York.

Chicago: Demand quiet; trend firm; supply fair; ground grain $31.50, Canadian $26, sacked.

Minneapolis: Tight supplies and little demand add up to slim trading; Canadian down 50¢ from last week to $20.50; domestic ranges unchanged: lights $9@13, mediums $14@21, heavies $22@31; 15% flax screenings, nominal $37.

SOFT PHOSPHATE

(Sacked, delivered)

Atlanta: $20.65.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $25.42.
Kansas City: $25.07.
Memphis: $22.28.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.32.

SORGHUMS

Ft. Worth: Demand fair; offerings light; No. 2 yellow milo $2.06@2.08 cwt., delivered Texas common points.

Los Angeles: Demand good; trend firmer; supply tighter; milo $2.27½ cwt.

SOYBEAN OIL MEAL

Wichita: Demand good; supply ample; 44% $71, 50% $76, sacked; 44% $67, 50% $72 bulk, f.o.b. Wichita.

Ft. Worth: Demand fair; supply sufficient; 44% $69.30@70.50 March, $70.50@71.50 April-May; 50% $74.30@76 March, $75.30@77 April-May.

Cincinnati: Demand fair; trend higher; supply adequate; $63, Decatur.

Boston: Demand good; supply adequate; 44% $58@60, 50% $64@65, both f.o.b. Decatur.

Kansas City: Demand slow; trend steady to easy; supply ample; 44% solvent process $59@59.50, Decatur.

St. Louis: Demand slow; trend steady; supply ample; 44% $64.50.

Memphis: Demand fair; trend steady; supply ample; prime 44% solvent $62.50, f.o.b. Memphis.

Los Angeles: Demand steady; trend firmer; supply tight; $83.10@83.60.

Chicago: Demand only fair; trend irregular; supply ample; Decatur basis: 44% protein, unrestricted billing $62 and E.T.L. $59.50; 50% protein, unrestricted $67 and E.T.L. $65.

Philadelphia: Demand and supply fair; trend very unsettled; 44% $61, Decatur.

Omaha: Demand slow; trend steady; supply ample; 44% $65.90, delivered Omaha.

Louisville: Demand fair; trend strong; supply normal; $72.20, sacked, up $2.

Minneapolis: Price advanced $3 this week on 44% to $58.50, Decatur; 50% up $4 to $63.50, Decatur.

TANKAGE

Louisville: Demand slow; trend steady; supply good; 60% $90@95, sacked.

Cincinnati: Demand good; trend steady; supply short; 60% digester $90, Cincinnati.

Chicago: Demand fair; trend steady; supply ample; 60% protein $92.50, sacked.

Ft. Worth: Demand good; supply limited; 60% digester $90, sacked, Ft. Worth.

Wichita: Demand heavy; supply insufficient; 60% $92.50, sacked, f.o.b. plant.

Kansas City: Demand good; trend firm; supply tight; 60% digester $90.

St. Louis: Demand good; trend strong; supply light; $92.

Omaha: Demand and trend strong; supply fair; $95.

St. Paul: Demand good; supply limited; prices still climbing upward; Feb. 23 quote of $95@98, sacked, $1@2 higher than week earlier.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b., freight equalized with nearest producing plant; bulk $96.

Lima, Ohio: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged.

Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.

Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.

LaPlatte, Neb., and South Point, Ohio: Minimum 42% nitrogen, 262% protein equivalent, $100 ton, f.o.b., bagged; $96 ton, bulk, cars or trucks, freight equalized with nearest producing point.

Hamilton, Ontario: Minimum 42% nitrogen, 262% protein equivalent, delivered destination, $100 bagged, $96 bulk, carload or truck load, plus freight from nearest producing point to destination.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 5%¢ lb., f.o.b. north central Texas.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; 50 lb. or more $1.40, less than 50 lb. $1.45, freight allowed to destination.

WHEAT GERM MEAL

Buffalo: Demand and supply fair; trend steady; commercial grade $64, sacked, f.o.b. Buffalo.

Japan Has Its Fish Meal Problems, Too

WASHINGTON—The U.S. Department of the Interior reports that the Japanese Fishery Agency is actively promoting the establishment of an organization to represent the nation's fish meal manufacturers. Already, an organization called the Japan Fish Meal-Fish Oil Producers Assn. has been established in Hokkaido.

Last December, Japan's second conference for adjusting the supply and demand of fish meal ended without agreement. Representatives of the Fishery Agency, meal producers and users discussed problems of their own country's meal production and use, and of fish meal imported from Peru. However, according to U.S. observers, the meeting ended in a deadlock with producers and users holding divergent views.

Said U.S. Department of Interior officials: "Informed circles in the Fisheries Agency feel that the discussions have been exhausted and the problem will now be resolved through political settlement."

Apparently the Fishery Agency has not given up. U.S. officials say the agency hopes to establish an organization representative of the Japanese fish meal industry by first setting up regional groups, then establishing a national organization encompassing the fish flour industry as well.

For the present, the regional associations would not engage in economic ventures, such as joint marketing, but would concentrate on controlling production, exchanging information and conducting political activities directed toward domestic and foreign consumer groups.

The Department of the Interior said the problem of Japanese imports of Peruvian fish meal had not been resolved between the Fishery Agency and livestock people and the Fishery Agency hopes to seek an amicable settlement through the establishment of an association which would serve as chief spokesman for the meal industry in negotiations to maintain a balance in the feed-supply market, as well as improve the preparation of data and background information.

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FARM MIXING

(Continued from page 1)

feeds rather than trying to establish their own feed production facilities.

Dr. Schoeff pointed out that the industry has not stopped to ask, "Why are our farm customers thinking of making their own feeds? Is it because of product quality, dealer service, price, credit or other outside influences?"

Dr. Schoeff listed as reasons why the farmer wants to make his own feed as follows: (1) To save money (feed accounts for 50% to 75% of total production costs). (2) More convenient. (3) Save time (traveling to and from and waiting at mill. (4) Fresher feed. (5) Make use of knowledge acquired in college training. (6) Stubbornness (won't let somebody tell him how to run his business). (7) Forced to do it (manufacturer who sells supplements or premixes direct leaves farmer little choice and in many cases encourages him to do his own processing).

College Surveys

But not all farmers want to make their own feed, the K-State speaker said. He cited a Wisconsin study made in 1958 showing that 74% of the farmers had their feed ground at the local feed mill; 16% used their own equipment, and 10% used a mobile mill. An Indiana survey in 1957 revealed that 70% of farmers feeding grain had their corn shelled and ground at the elevator.

An Illinois survey of hog farmers in 1960 showed only 36% had their local dealer make their feed. About 31% of the 299 farmers using 100 tons or more of feed fed corn and supplement free choice; some 28% fed complete rations free choice; 30% fed ground grain part time and corn and supplement free choice part time; 10% used other programs. Of those using complete rations, 11.1% bought a complete ration; 49.5% used custom grinding and mixing with a supplement; 33% did their own grinding and mixed with a supplement; 6.4% bought their own ingredients and prepared the entire ration on their farms.

These same Illinois farmers reported owning the following equipment: grinder, 54.9%; mixer, 6.7%; grinder-mixer, 3.3%, none 8.7%. More than one fourth did not reply to the question.

Dr. Schoeff cited figures from the Census of Manufactures on the trend toward more supplement-type feed being sold. In 1947, complete feed as a percentage of the total production was as follows: poultry, 90%; dairy, 88%; hog, 52%. In 1958 the figures were: poultry, 83%; dairy, 81%, hog, 45%.

"The proportion of complete and supplement feeds sold by manufacturers will vary widely between regions," Dr. Schoeff said. "The Midwest farmers produce a surplus of grain and therefore use more supplements than do the farmers in New England or on the Pacific Coast. There are industry leaders who feel that sales of complete feeds will be increasing relative to supplements. This is possible if certain trends in meat, milk and egg production and feed distribution develop."

Dr. Schoeff also pointed out that there has been a sharp drop in the production of feed grinders in the U.S. since 1954, implying that this decrease has come about because of less interest by farmers in grinding their own feed. He noted, however, that many firms are introducing new lines of portable grinders or roller mills and mixers to run by tractor power take-off in an effort to capitalize on the free publicity being given to on-the-farm grinding and mixing by the farm publications.

Factors Encouraging Farmers

The K-State specialist said that the farmer is being encouraged to make his own feed by the following:

1. Feed manufacturers who sell supplements and premixes direct and a few others who are trying to "work both sides of the street."

2. Generally speaking, the land grant college and USDA personnel have in the past encouraged farmers to make their own feed, but some university people are now analyzing the situation and finding that the formula feed industry is doing an efficient job of serving the farmer.

3. Farm magazines featuring articles about on-the-farm feed processing and materials handling which must be highly successful to gain reader attention.

4. Manufacturers of farm size grinders and mixers.

5. Mobile mill manufacturers and operators. "The mobile mill is filling a real need for grinding and mixing service in those areas where it is not available at the retail feed dealer. Mobile mill operators do offer molasses blending, roughage grinding which most stationary custom mills do not offer, and delivery of feeds by auger air systems into bulk storage bins or feeders."

To learn about research activities in the on-the-farm grinding and mixing field by agricultural engineering departments in the U.S., Dr. Schoeff did a mail survey and found that only nine of the states reported past research, eight reported current research and eight indicated they would do research in this area in the future.

In Kansas, Dr. Schoeff reported, agricultural engineers are conducting. They are not recommending that farmers make feeds from the ground up. They recognize the difficulty and cost of handling and mixing the many micro-ingredients in today's feed, and suggest that the farmer use a supplement or premix if he decides to do the work himself. The objective of these meetings is to get farmers to plan a feed handling system rather than let it grow like "Topsy," Dr. Schoeff said.

Only the formula feed manufacturer has the know-how and equipment to make the pre-starters and starters and other specialty feeds, Dr. Schoeff said. "Discussion of making feed at point of use ignores the need for and use of these essential feeds and uses only the fattening or production feeds that account for the major tonnage," he said.

Effect on Dealer

"While there might be some shifting from a complete commercial feed to a commercial supplement and from commercial supplement to a premix," Dr. Schoeff continued, "I would not expect the feed industry to lose much tonnage in total because of customers deciding to make their own feed. The main effect will be on the retail dealer who has sold this customer on the basis of custom milling service and sacked supplement and now stands to lose him to a competitor who may sell on price or other service such as bulk delivery, farm engineering or marketing of end products."

There is still a tremendous potential in selling formula feed to the many farmers who are not using it, Dr. Schoeff noted.

"Recognize that you and your dealers are in business to fulfill the farmers' needs. Those who remain in the feed business must devote their full time to it or be large enough to have competent men running the feed division or department of a company.

"The farmer businessman must be told that the feed industry has the products and services he needs to run a profitable business. Further, he must be sold and kept sold that he is getting value plus on every dollar he spends on feed or services."

The formula feed industry has many key selling points, Dr. Schoeff listed these: (1) Value in high returns for each dollar spent. (2) Quality feeds based on years of research and experience. (3) Feeds available in different forms — meal, pellets, crumbles. (4) Feeds with added molasses and fats. (5) Bulk handling service. (6) Grain bank service. (7) Credit in various forms. (8) Assistance in marketing end products. (9) Educational help in feeding and management. (10) Integrity.

Conclusions

In summary, Dr. Schoeff said: "You will note that I have said nothing about whether a farmer can afford to make his own feed or how big an enterprise he should have. There are only a few economic studies of on-the-farm mixing and certain cost factors are overlooked, so I chose to leave them out. Every farm is different and it will be difficult to get research facts to solve every problem. Some accurate basic data as to grinding and mixing costs for model layouts need to be developed.

"Positive selling on the part of the feed industry will be the best way to protect investment and profits. Don't try to tell your customers how to run their businesses.

"On-the-farm grinding and mixing will be confined primarily to the Midwest and to hog, beef and dairy feeds.

"Sales and distribution problems will limit use of premixes in making feeds at the farm level during the next few years.

"There will always be some farmers who want to make their own feeds. The mobile feed mill offers a good service for those farmers short on capital and labor.

"The Midwest feed industry must improve its retail dealers and its custom milling facilities if the dealers are to attract and hold big farm customers."

Panel Discussion

As a follow-up of Dr. Schoeff's talk, a panel made additional points on this topic and raised some questions. Moderated by W. E. Glennon, American Feed Manufacturers Assn.,

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Profit Proved Plan

the panel consisted of Roger Berglund, Feedstuffs; Gerald A. Karstens, Feed Age, and Bruce Smith, The Feed Bag.

Mr. Berglund called attention to concern expressed by at least some Midwest feed men over growth of on-farm mixing. "One local manufacturer said that in the past year the number of mix-mills in his area had grown from 5 to 25. He is holding meetings with these and other producers to bring out basic nutritional and economic information and show a concentrate program can be more sound than some of the premix and other programs or how grain exchange programs can be efficient and economical. Other feed men also are taking steps to accumulate and develop specific basic data to show farmers how they can better use commercial concentrates or feeds and invest their capital and know-how and labor in animal production. Some feed firms, too, are stressing the success and economy of free choice feeding of supplement and grain. Case histories of farmers who have tried ground-up farm mixing and dropped it also are used. Meanwhile, more complete cost information on farm mixing is needed."

Low Margins

Some feed firms have programs of selling feeds at relatively low margins over ingredient costs to big producers, it was noted. A feed man in another area says he can make and deliver feed at a total cost of 1½ man-hours per ton, and he "isn't at all worried about on-farm mixing." Some feed men say that if producers continue to by-pass them, they will be forced to by-pass the farmer by feeding out more livestock of their own.

Failure to consider all the cost and service factors in making feed on the farm was cited by Mr. Karstens as one of the reasons why there is a growth in this area. He mentioned a number of these factors: (1) Return on investment. (2) Electric power cost. (3) Shrinkage losses. (4) Cost of ingredients in smaller quantities. (5) Labor. (6) Nutritional services. (7) Insurance rates. (8) Equipment maintenance costs. (9) Inability to check quality of ingredients purchased.

"If the feed manufacturer is selling a feeding program instead of just a ton of feed, I don't think he should have any trouble," Mr. Karstens said.

Mr. Karstens also raised the question as to what the feed industry is doing to educate the educators. He said there is a need for nutritionists to get together with agricultural engineers to acquaint them with the problems of producing feed.

Mr. Smith called attention to a trend he had observed that keeps the feed man in the picture, even when the big producer decides he should have grinding and mixing facilities on his farm. In some of these cases, mobile or stationary feed grinding and mixing equipment is located to serve only this big producer, but the feed supplier owns and operates the equipment.

"Textbook" Suggested

"The feed industry should produce a textbook giving the advantages and disadvantages of on-the-farm mixing," Mr. Smith said. This would bring out all the cost factors as well as such points as quality control, nutritional services, ingredient purchasing and other considerations.

Mr. Glennon said that the AFMA is currently working on a booklet giving as many of these facts as are available. However, he noted that unfortunately, there are not too many facts and figures available.

In answer to a question by Mr. Glennon relating to the feed industry's relationships with agricultural engineers at universities, Dr. Schoeff said he thought it was essential for the feed trade to work closely with them. He further suggested that the feed industry should also try to work more closely with the agricultural economists, industrial engineers and the business schools at the colleges. "They are anxious to help if they can become familiar with the problems," he said.

MYOPIA

(Continued from page 1)

point in declaring an even more insidious and critical disease is "Management Myopia," which he described as "failure to see that there is any need at all for marketing—marketing in the sense of purposeful, planned action."

There are three significant trends going on, Mr. Bursk said: (1) automation, (2) statistical decision making, (3) the cost-price squeeze. All three affect big business most, and offer an opportunity for small business to take advantage of them.

Mr. Bursk said automation requires a high investment in equipment, which in turn involves a firm commitment to produce or perform a large number of the same thing; and the result is standardization and loss of flexibility. Statistical decision making is almost necessary for the large operator, since he cannot afford to miss the mass market. Yet this again pushes him in the direction of standardization. Also the large operator is held in this pattern by the cost-price squeeze, which requires him to compete for large markets with a price or promotional appeal rather than on the basis of the products or services offered.

"All this is not a new phenomenon but it has never before been so widespread," Mr. Bursk said. "Never before have so many so-called 'growth' industries been trapped by their own growth."

The only way to market better is by thinking first of the consumer or buyer and then of how to reach him, Mr. Bursk said, which means making your product mean more to the prospects you have selected.

There are two facets of creative marketing management, Mr. Bursk said: One can be called "forward-looking" and the other "risk taking." The former studies how the relationship can be improved between market and product and involves studying the past and present for clues as to what will and will not work. The risk-taking is planned in a way which maximizes the percentages in favor of success while keeping the penalty of failure to the minimum.

Right now, Mr. Bursk said, the greatest threat to this planned deliberate approach to decision making comes from the very tools that should make it fruitful—research in behavioral sciences which provide a stronger basis of information for understanding situations, but which cannot and should not provide the decision itself. However valuable the new research techniques may be for the purpose of diagnosis, they are inept for decision making, and management must do the creative part of the marketing job, he said.

Following Mr. Bursk's talk, he answered questions put to him by a panel composed of Collier Wenderoth, chairman, O. K. Feed Mills, Ft. Smith, Ark.; Wiley Akins, Peter Hand Foundation, Chicago; Quentin Marsh, Hubbard Milling Co., Mankato, Minn.; and Guy Cooper, O. A. Cooper Co., Humboldt, Neb.

Among Mr. Bursk's comments in reply to questions were these:

—True conservatism involves risk taking, but planned in such a way that if you are wrong, it is on the side that will cost the least to be wrong.

—A good starting point for industry improvement is a uniform cost accounting system.

—Automation in business records is frequently overdone today. Before you automate you should find out what you want to know from the automation and most businesses have not yet figured this out.

—The Food and Drug Administration activities are likely to become more intolerable rather than less.

—The present administration in Washington is more conservative than its "phrase makers" who are quoted in the headlines would indicate.

HAVE FOOD — MUST SELL — Fred Darragh, who has served as president of the Midwest association the past year, set the stage for the convention discussions with comments on the meeting theme—"Have Food—Must Sell."

Mr. Darragh, with The Darragh Co., Little Rock, pointed out that there actually is but one person served by the feed and related industries, and that is the consumer who buys food in the retail market. Unless products can be sold to consumers, all of the efforts of the feed and food industries are for naught.

"We are in the food business, not just the feed business," Mr. Darragh emphasized.

He noted, among other things, how the efforts of groups like the American Dairy Assn., Poultry & Egg National Board and National Broiler Council are helping in the marketing function.

BUILDING MARKETS—"Building Markets for Expanding Production" was the title of the talk given by Frank Frazier, executive vice president of the National Broiler Council, Richmond, Va.

"Our industry—yours and mine—is considered the leader in the current agricultural revolution, largely on the basis of our growth through production efficiency," Mr. Frazier said.

"We can, and must, be equally effective in the field of merchandising, as we recognize we are now in the food business and must compete for the consumer's favor. It is squarely up to us to sell our own food product just as any other food manufacturer or producer. This is true of broilers . . . in fact, it's true of all agricultural commodities."

Mr. Frazier saluted the leaders of the Midwest association for selecting as the theme of the convention, "Have Food — Must Sell." "Their choice is symbolic of one of the most dramatic changes taking place in American agriculture, because it reveals the growing awareness of the importance of end product merchandising to a sound, successful industry," he said.

The broiler industry, Mr. Frazier continued, has sacrificed the fruits of production efficiency to buy its way into the market place, and at the same time neglected many sound merchandising opportunities for building markets successfully and profitably because of being producer rather than consumer oriented.

"Surely experience of the past can do a lot to point up the right course for the future," he said.

Noting that the industry had been able to show a profit by increasing efficiency fast enough to reduce costs sufficiently to offset the effect of lower prices, Mr. Frazier said: "Even the most optimistic today would concede a dramatic decline in production costs just isn't in the cards. And with thin margins, those in the broiler industry can no longer afford to produce at a level chosen for their own convenience, and use price to force increased volume through market channels."

Techniques to elevate consumer demand are well known and widely used, the NBC official continued. The tools are advertising, merchandising, consumer publicity and research to convey sales messages built around such themes as convenience, appetite appeal and nutrition.

Mr. Frazier pointed out that no food has squatters' rights in the market place. A food must have the right image (chicken has a wonderful low calorie, high protein story to tell a calorie-conscious American public), and it must have appetite appeal (another asset of chicken), Mr. Frazier said. But to make these assets pay off, it is necessary to convince the homemakers who do the buying in the supermarkets. Mr. Frazier told about the promotions that NBC has launched in this direction.

ASSOCIATION ACTIVITIES — Lloyd Larson, executive vice president of the association, called attention to the 1961 Feed Production School, Sept. 11-13, and the Centennial Nutrition Conference, Oct. 23-25, both in Kansas City. He described some of the outstanding displays that are being planned, and said the program promises to be the best round-up of nutrition information ever presented in a single conference.

Dr. Rollin Thayer, Oklahoma State University, chairman of the essay contest being conducted in connection with the conference, reported that there has been tremendous response. Juniors in the land-grant universities are entering the contest, writing essays on "Agriculture in the Space Age." "We believe these essays will be a useful vehicle to carry the story of what agriculture truly is today to the general public," Dr. Thayer said.

HIGHER SUPPORTS OPPOSED

KANSAS CITY — The Midwest Feed Manufacturers Assn. went on record as opposing higher support prices for grains, soybeans and allied products in a resolution adopted at the annual meeting in Kansas City Feb. 19-21. The vote was overwhelmingly in favor of the resolution, but it was not unanimous. The resolution said that the proposed higher support levels on feed grains and soybeans would put livestock feeders in a cost-price squeeze and would increase consumer food costs.

In another resolution adopted at the meeting, the association sent a message of congratulations to an associate member, Ralph Beermann, of Beermann Bros. Dehy, Dakota City, Neb., who recently was elected to Congress and who has been appointed a member of the House Agriculture Committee.

A total of 667 were registered at the convention.

L. C. Worth Mill in K.C. Damaged by Fire

KANSAS CITY — A fire, believed started by a dust explosion, did considerable damage to the feed mill and warehouse of the L. C. Worth Commission Co. at 3110 E. 18th St. here.

The blaze started during the evening of Feb. 22 when the plant was deserted. Eleven fire companies answered the alarm. They poured large amounts of water into the building and were able to get the fire under control before it spread to the rear of the building.

The front of the building housed the mixing equipment which was a total loss. Also destroyed by the fire and water were sacked feed and ingredients stored in the basement. Damage was estimated by fire officials at $25,000 to the building and $20,000 to the contents, but Edward A. Worth, owner, said he thought it would be higher. The walls of the building are intact, but a new roof and new machinery will be necessary before production can be resumed. This will take about six weeks, Mr. Worth said.

The loss was covered by insurance.

UTAH FEED MAN DIES

SALT LAKE CITY — James Andrew Stevenson, 60, former owner of the White Fawn Mill & Elevator Co., South Jordan, Utah, and the Consolidated Feed Co., Salt Lake City, died Feb. 21 in a Salt Lake hospital after a long illness.

OREGON

(Continued from page 5)

Reports on livestock feeding included a new look at selenium, regarded in the past primarily for its toxic manifestations. Accumulation of selenium in plants grazed by livestock has led to such forms of poisoning as blind staggers or so-called alkali disease.

Now we know that selenium can be considered an interesting trace element for treating livestock diseases related to specific nutritional conditions, reported Dr. J. E. Oldfield, Oregon State College animal nutritionist.

One of the more prominent diseases related to nutritional conditions has been white muscle disease of sheep and cattle. Selenium is showing promise for preventing this disease, Dr. Oldfield said.

Tests to date have demonstrated that administration of selenium cannot overcome all manifestations of vitamin E deficiency, he emphasized, pointing out that more research is needed before it can be used as a feed additive.

Copper Supplementations

Discussion of mineral elements also included a report on methods of copper supplementation. Dr. J. R. Haag, OSC agricultural chemist, said the most common approach to copper deficiencies in range animals is the addition of copper compounds to salt or salt-mineral licks.

Amount of copper added to such licks varies from ¼ to 1% of crystalline copper sulfate, depending upon local circumstances and whether it is intended for cattle or sheep. While the method is convenient and economical, Dr. Haag said its chief disadvantage is the wide variation among animals in the consumption of such licks. This also varies among regions.

He emphasized that any addition of copper to feedstuffs be limited to demonstrated needs with the feed industry and livestock producer assuming appropriate responsibility for use of this potentially hazardous material.

Forages and other feedstuffs containing 1 to 2 p.p.m. copper or less may lead to simple copper deficiency with symptoms in cattle ranging from lack of thrift to a history of broken bones in certain regions. Oregon has some six areas where conditions of impaired copper status have been noted. These appear to involve localized grazing conditions rather than feedstuffs going into commerce, he explained.

Forages with 3 to 4 p.p.m. copper or more permit normal levels of copper in animal tissue unless there are interfering factors such as molybdenum, sulfates and as yet unknown factors.

The big problem in treatment for copper deficiency is the delicate balance between adequacy and toxicity, the chemist explained. Sheep are particularly susceptible to copper poisoning. Also, little is known concerning the role of excessive, but not necessarily toxic, levels of copper in promoting oxidized flavors. He emphasized that shot-gun methods are definitely not in order.

Barley for Swine

Oregon State College studies with barley for swine rations indicate that barley hull fiber does more than merely dilute available nutrients with an indigestible material, reported L. M. Larsen, animal husbandry researcher.

Mr. Larsen said there must be other factors in the hull that either interfere physically with action of enzymes in the digestive tract or chemically inhibit enzyme action.

Test animals made lower average daily gains on rations containing barley hulls as compared with purified cellulose when both materials provided the same amount of non-nutritive material in experimental rations.

Feed requirements per pound of gain were higher for rations containing hulls than for rations with cellulose added. Pearled barley and corn were used as the basic check rations.

Mr. Larsen said the studies emphasized the need for treatment of barley to overcome this added factor. While pelleting of barley results in physical improvement for swine rations, tests showed little or no beneficial chemical change resulting from the steam-heating and pelleting process. He added that the test again demonstrated that pelleting is more effective in improving fibrous grains than it is in improving corn.

Wide variation of feed value in roughages as compared with the more constant values in concentrates was discussed by Dr. J. H. Meyer, University of California.

He stressed the importance of producing high-quality forages low in lignin which is the chief culprit affecting wide ranges of digestibility in forages.

Feeding trials with beef steers showed that animals fed alfalfa cut at bud stage—containing 7.7% lignin—made average daily gains of 1.48 lb. compared to only 1.12 lb. daily gain for steers fed alfalfa at the one half bloom stage when lignin levels had increased to 9%.

While it is feasible to remove lignin from forages to make them more digestible, Dr. Meyer said it is more practical to control lignin content through crop management practices.

Protein Supplementation

The researcher also discussed need for protein supplementation of cattle and sheep on predominant rations of dried grass hay or dry grass range which may contain as low as 1 or 2% digestible protein.

Ewe lambs grazing on dry west coast rangeland showed marked benefits from ½ lb. cottonseed meal per day for 140 days in late summer and early fall. Even though check animals, on grazing only, made compensatory gains during the winter-spring green grass season, total performance for the July to April months favored supplementation. Wool production was better and total gains slightly better for lambs receiving the supplement. But the main dividend was decreased death loss in some years which more than paid for the supplement.

The researcher said trials also showed economic benefits in supplementing growing heifer calves and weaner steers with 2 lb. of cottonseed meal per day during the July to November dry grass season.

Parasite Research

New materials and current research for control of livestock parasites were reviewed by Dr. S. E. Knapp, Oregon State College department of veterinary medicine.

New drugs, which show excellent possibilities for livestock parasite control, are the organic phosphates, several of which have already been approved by the Food & Drug Administration for use as insecticides.

Dr. Knapp reported recent trials in which lungworm larvae, exposed to high level radiation to impair their reproductive ability, were used to produce immunity to lungworm in dairy calves. He said a vaccine of this type is being produced for experimental purposes. Specific vaccines are also a possibility for control of stomach and intestinal worms, he added.

Physical or chemical nature of certain feeds may also find a role in controlling internal parasites. He cited the example of white clover which appears to be somewhat toxic to certain species of roundworm larvae.

Other main topics included a review of FDA regulations by Dr. Wilgus; mineral requirements for growth and egg production reviewed by Dr. Scott; and use of dry feedstuffs in mink rations reported by Dr. F. M. Stout, OSC animal nutritionist.

Official Promotes 'Buy American' Drive

SILVER CREEK, N.Y.—While much has been written about the competition of foreign manufactured goods and the effect of curtailing U.S. production and employment, Alexis C. Barbeau, Jr., president and general manager of S. Howes Co., Inc., here, has done something about the problem.

The official of the firm which manufactures machinery for the grain, feed, seed and allied industries is promoting a "Buy American" campaign. Begun as a one-man drive, company employees have joined in along with suppliers of the firm, customers and business associates and even competitors, the company reports.

The company's national advertising program now carries the message "American made—your best buy."

In commenting on his campaign, Mr. Barbeau stated, "We're not trying to wave the American flag and appeal to people's patriotism to sell our products. Sure, that's involved, naturally. But far more important, to our present and future customers, is quality workmanship; dependable day-in, day-out operation, and the availability of parts and service.

"Unfortunately, some buyers look only at initial cost. Without due consideration to design ond construction, quality and operating efficiency, they ultimately become victims of 'price buying.' Our company and other American manufacturers, and their employees, likewise can become victims of this competition stemming from European and Asiatic lower production costs and lack of adequate protection import tariffs. We think it's just good common sense to buy American-made products."

Chicago Board Hikes Futures Commissions

CHICAGO—Members of the Chicago Board of Trade have voted in favor of an increase in the commissions on futures contracts covering wheat, corn, oats, rye, soybeans and milo. The new and higher rates became effective Feb. 17 on trades that were initiated during the current session.

On the grains, in lots of 5,000 bu. or multiples thereof, for each 5,000 bu., the following rates will apply to non-members of the exchange: Where the selling price is 99⅞¢ bu. or lower, $18; where it is $1 and up to and including $2.24⅞, $22, and where the selling price is $2.25 or higher, $24.

GFDNA

(Continued from page 1)

and Friday will be work days for the entire membership, with most of the activities taking place on the two final days.

Alvin E. Oliver, GFDNA executive vice president, commented on the "amazing nationwide approval" of the Congressional dinner on Thursday night, March 23. He indicated that an unusual response and early reservations may result in a shortage of space in the mammoth Presidential Room of the Statler-Hilton Hotel. He stated that many members who have not attended conventions in past years have made reservations for this year.

The Congressional dinner will be strictly a social event which will give GFDNA members and Congressmen a change to get acquainted and perhaps discuss their mutual problems. Many state delegations are having a private reception before the dinner. There will be no speeches, but professional entertainment will be furnished.

Mr. Force will be the keynote speaker at the opening session on Thursday morning, March 23. Mr. Force is a partner in Little Brothers, Kalamazoo, Mich., and has become a prominent state and national leader for the grain and feed industry.

Horace Godfrey

George P. Larrick

A transportation forum on Wednesday, a feed forum on Thursday and a grain forum on Friday will constitute the nucleus of convention educational events.

George Larrick, Food and Drug Administration commissioner, and Dr. Roland Bethke, vice president in charge of research for Ralston Purina Co., will be the featured speakers for the feed forum. Their subjects will be "Evolution Facing the Feed Industry" and "Impact of FDA Regulations on the Feed Industry," respectively.

A question and answer session will constitute a major portion of the feed forum activities, as four top FDA men answer questions directed to them. The panel is to include J. Kenneth Kirk, assistant to the commissioner for regulations making; Ralph Kneeland, chief, food branch, Bureau of Enforcement; William Goodrich, chief, general council office, and Dr. Charles Durbin, veterinary medical director.

The ever-changing story of transportation will be thoroughly studied in a special transportation forum on Wednesday afternoon, March 22. Speakers will be Sen. Warren G. Magnuson (D., Wash.), chairman, Interstate and Foreign Commerce Committee; Robert Parrott, executive vice president, Central Soya; Robert Haldeman, U.S. Department of Agriculture, transportation economist, and Ben Heineman, chairman, the Chicago & North Western Railway.

Horace Godfrey, administrator, Commodity Stabilization Service, and his top staff associates, will provide the program for the grain forum on Friday afternoon. Their subjects will be "Impact of New Farm Legislation on Grain Supplies" and "Managing the Commodity Credit Corp. Inventory."

The Ikard-Curtis-Sparkman Tax Adjustment Bill will hold the spotlight on Friday morning when Congressman Thomas Curtis (R., Mo.), addresses the convention on this subject. The proposed legislation is based on the principle of reinvestment of earnings to allow a business capital for growth and modernization.

A recent addition to the list of outstanding speakers is Lauren Soth, editorial page editor of the Des Moines Register and Tribune and author of the popular book, "Farm Trouble." Mr. Soth was a member of former President Eisenhower's Commission on National Goals, at which time he wrote "Farm Policies for the Sixties," which is a statement of the farm problem and a proposal for meeting it. Mr. Soth is a 1955 Pulitzer Prize winner and an outstanding speaker. He will be the luncheon speaker on Thursday, March 23.

President Force has announced that Mrs. Alvin Oliver, Alexandria, Va., will serve as chairman for the ladies' program at the convention. A highlight of the ladies' program will be a special tour of Washington.

George McGovern, Food-for-Peace director, will talk on this popular subject on Thursday morning. As special assistant to President Kennedy, Mr. McGovern is in a strategic position to know the inner workings of the White House. He is responsible for proposing methods of distribution of surpluses abroad under the Food-for-Peace program.

Borden Ads in Foreign Languages Explained

NEW YORK — For readers who have been puzzled by the foreign language advertisements of Borden's Feed Supplements Division in Feedstuffs' last two issues, here comes the explanation.

"Printed in Spanish and French, the ads have been designed to help prospective customers in other countries learn about the basic qualities of Borden's feed supplements," according to Richard G. Sanders, the division's sales and marketing director.

The Borden ad in this issue of Feedstuffs appears in Chinese. It is to be followed by one in Italian and a full page ad containing a translation.

Mr. Sanders said that the ads were also intended to create interest among readers in this country through the novelty of the approach. And, interest they have created, for Mr. Sanders reports numerous inquiries regarding the ads.

ELEVATOR SALE TOLD

WHITE SULPHUR SPRINGS, MONT.—Ray Bailey has sold his elevator business, known as Ray's Feed & Grain, to Teslow, Inc., of Bozeman. Mr. Bailey, who has operated the facility for the last 13 years, now will devote his time to his ranching business.

CSC

(Continued from page 6)

to take an active role in animal nutrition matters as a consultant to CSC.

The oil soluble vitamin products made by the acquired companies complement CSC's current vitamin and antibiotics operations, Mr. Wheeler said. Together, he said, these activities present a number of interesting possibilities for new feed supplements and related products which would further improve farm animal, cattle and poultry health and growth.

Commercial Solvents now supplies the feed industry with a broad line of antibiotic and water soluble vitamin products which includes the Baciferm group of bacitracin antibiotic supplements, choline chloride, Proferm (vitamin B_{12}), riboflavin, and Silotracin, the antibiotic silage preservative.

Mr. Wheeler said that Stabilized Vitamins, Inc., was the first company in the U.S. to make a stabilized form of vitamin A, and is today a major producer. Vitamin A accounts for more than half of the nation's feed vitamin sales.

PROGRAM

(Continued from page 7)

—for top dressing on the regular rations—or as stress feeds and other custom-mix preparations that can be mixed in with the regular feed.

(3) The third step suggested is switching to low levels of Terramycin "for extra gains and savings in feed for the entire feeding period." These feeds are available as complete feeds or supplements.

(4) Use of Pfizer vitamin A palmitate in gelatin in the feedlot ration is recommended to correct any vitamin A deficiencies in cattle just arriving in feedlot; also to make up for any shortages of this vitamin which may occur in home-grown feedstuffs.

(5) "At the first sign of trouble from scours and shipping fever, go into quick action with feeds containing high levels of Terramycin," Pfizer recommends.

Summaries of several years of extensive college and commercial feeder trials by Pfizer investigators indicate that the Terramycin-Stimplant combination "will provide 21% greater gains and 10.6% improved feed efficiency over control-fed cattle."

Terramycin alone in feeds has provided an average of 8.9% increase in gains and a 7.6% boost in feed efficiency in similar research work, the summaries show.

Pfizer's "Beef-Maker" program, with additional information on the use of Stimplants, Terramycin in the feed and in crumbles form, and vitamin A palmitate in gelatin, is currently available on request.

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MARKETS

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stocks of feed on hand. According to one mill representative, the trade is buying regularly, but it is taking just a little less of nearly everything on the list.

Chick and turkey starters are beginning to move in a limited way, but no volume is reported as yet. Mild weather seems to have helped hog feed demand for sales have picked up on this item. Dairy and cattle feeds are slowing down.

Pacific Northwest

All types of formula feeds found the going real slow throughout Oregon, Washington and Idaho this week in the face of continued mild winter weather. Representative mixers reported that cattle and dairy feeds showed the sharpest decline in demand because of weather that made possible early grazing of pastures and lower mountain ranges. Poultry feed sales were down, but made up the bulk of the movement.

Feed ingredient listings followed a mixed trend, but averaged about unchanged with declines in wheat millfeeds and most feeding grains offsetting rather substantial gains for soybean, cottonseed and meat and bone meals.

Trading appeared to be generally narrow and confined mostly to current needs.

TOP OF THE HOPPER

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beef cattle is presently being shoved aside for projects that appear to have a better chance of getting on the market." This statement was made by Dr. Charles F. Chappel, manager of agricultural technical services, Elanco Products Co. (a division of Eli Lilly & Co.) at the recent National Livestock Feeders Assn. in Omaha.

IN A STUDY of Maine's contract broiler growers, conducted by Prof. Louis A. Ploch of the University of Maine, 60% of 245 respondents indicated they would not raise broilers independently even if they were able to finance their own operations. They considered the financial risk to be too great.

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HONEGGERS & CO., FEED & FARM BUILDING DIVISION, FAIRBURY, ILL.